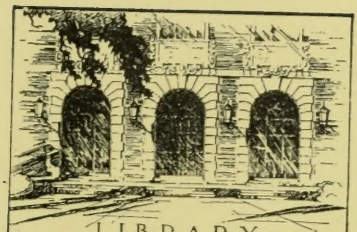
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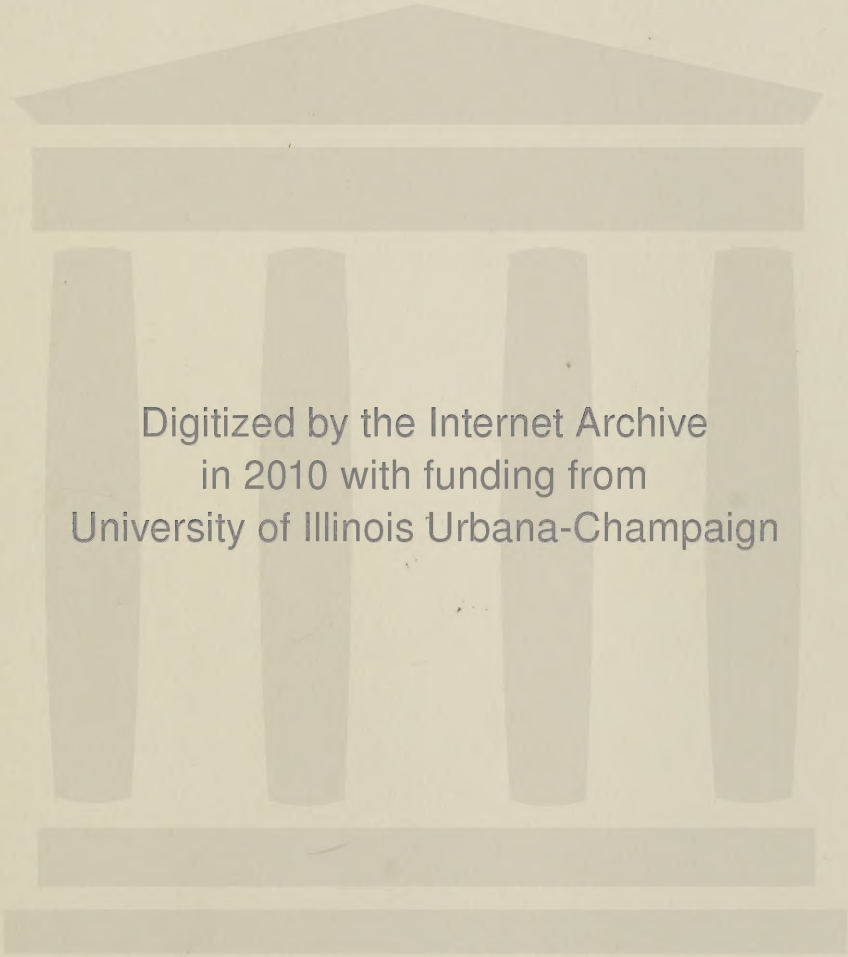
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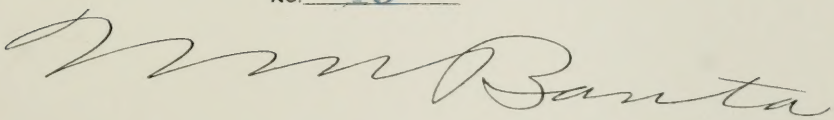

Nature Neighbors

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NONPAREIL.
(Passerina ciris).
Nearly Life-size.

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VOL. III—BIRDS

AMERICAN AUDUBON ASSOCIATION
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LAZULI BUNTING.
⅞ Life-size.

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THE LAZULI BUNTING*

In Colorado and Arizona the Lazuli Painted Finch, as it is called, is common, while in California it is very abundant, being, in fact, generally distributed throughout the West, and along the Pacific Coast it is found as far north as Puget Sound, during the summer. Davie says it replaces the indigo bunting from the Plains to the Pacific, being found in all suitable localities. The nest is usually built in a bush or in the lower limbs of trees, a few feet from the ground. Fine strips of bark, small twigs, grasses, and hair are used in preparing it for the four tiny, light bluish-green eggs, which readily fade when exposed to light. The eggs so closely resemble those of the bluebird as not to be distinguishable with certainty. The nest is an inartistic one for a bird of gay plumage.

From Florence A. Merriam's charming book, "A-Birding on a Bronco," we select a description of the pretty manners of this attractive bird:

"While waiting for the woodpeckers, one day, I saw a small brownish bird flying busily back and forth to some green weeds. She was joined by her mate, a handsome blue Lazuli Bunting, even more beautiful than our lovely indigo, and he flew beside her, full of life and joy. He lit on the side of a cockle stem, and on the instant caught sight of me. Alas! he seemed suddenly turned to stone. He held onto that stalk as if his little legs had been bars of iron and I a devouring monster. When he had collected his wits enough to fly off, instead of the careless, gay flight

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with which he had come out through the open air, he timidly kept low within the cockle field, making a circuitous way through the high stalks."

PAINTED BUNTING OR NONPAREIL

The Painted Bunting, Nonpareil, or Mexican Canary occurs in the Southern States from Florida and Carolina westward to the eastern portions of Texas, usually wintering in the tropics. A few reach the Ohio Valley in southern Illinois and Indiana. In the South they are favorite cage birds, and readily become reconciled to small quarters. Like the indigo bunting, the male is a strikingly colored bird, but the plumage of the female is plain olive green. One variety spends the winter in Florida, but does not seek a more northerly climate until about May.

In their winter haunts they are shy and retiring, remaining in dense shrubbery where the country is not under cultivation. Often while singing the males remain concealed among the foliage, and are difficult to observe as is our yellow-breasted chat. Their song may be favorably compared with that of the indigo bunting.

The birds live chiefly upon seeds and berries. Until the young leave the nest, they are fed upon insects and their larvæ. The nests are rather loosely constructed of leaves and stems of grass and are lined with the same material. Low bushes and young trees are the favorite nesting sites, although the birds are sometimes found breeding in the high timber, several nesting at times in a single tree.

Four eggs are laid in May and a second brood is fre-

FROM COL. CHI. ACAD. SCIENCES

DICKCISSEL.
(Spiza americana).
⅔ Life-size.

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quently reared in July. The eggs are pale bluish-white, quite thickly speckled with reddish-brown.

DICKCISSEL

The Dickcissel, or Black-throated Bunting, is at times of erratic occurrence. They breed in Mississippi Valley from Texas to Minnesota, wintering in Central and South America. Some years they are abundant in certain localities in northern Illinois, and perhaps the next year few are seen. The male in appearance might remind one of our common cock sparrow with his jet throat. A closer inspection will reveal that the throat of the dickcissel is bordered with light yellow. The song of the male is "Dickcissel-cissel," oft repeated, by no means musical, and with a monotonous repetition continued for hours at a time. During the hottest days of July and August, four to eight birds may be in voice at the same time. These field birds call from a fence post, wheat stalk, little tree, or telephone wire.

The dickcissel feeds upon crickets, bugs, weed seeds, and sometimes wild fruits, such as strawberries.

The female is a very plain and rather shy bird. The first nests are usually placed on the ground or a few inches above the earth, in a tussock of grass. The four or five eggs, laid in early May, are plain light blue. Late in July or early August the dickcissel raises a second brood, and this nest is usually placed in a low bush or shrub. Stems, coarse grass, and horse hair enter into the composition of the nest. Plant fibers such as Indian hemp are frequently used externally, giving the nest an artistic appearance.

CHAPTER XVII

INSECTIVOROUS BIRDS

Tanagers are American birds found principally in the tropics. Of the three hundred and fifty species, only five reach the United States. They spend most of their time in wooded lowlands, where they feed upon insects and fruits. The males are remarkable for the brilliancy of their plumage. Few are beautiful songsters; among them, however, is our scarlet tanager.

Swallows are decidedly insectivorous. They feed while upon the wing, and travel great distances, apparently unfatigued, as their flight is the most remarkable of that of any family. The feet are weak, being little used. They nest in pairs and in colonies, and migrate in large flocks by day.

Waxwings are highly gregarious except while breeding. These handsome but songless birds feed upon insects, berries, and fruit. They receive their name from the waxlike tips on secondaries and sometimes on tail.

Shrikes, though representing about two hundred species, are mostly Old World forms, only two varieties being found in America. They prey upon insects, birds, and small mammals, which they impale upon thorns or fence barbs until such time as they choose to satisfy their appetites.

Vireos are peculiar to America. Of the fifty species, fifteen reach the United States. These insectivorous birds are arboreal and slow of movement, gleaning food from leaf

and bark surface mainly. Their plumage has a greenish or grayish cast, harmonizing well with the foliage in which they feed. They are good songsters, and construct beautiful nests.

THE LOUISIANA TANAGER*

The tanagers make their home in the trees, and, being of a retiring disposition, are more numerous within the bounds of the forest. During the breeding season they retire still further into the interior. No wonder that they are more numerous in tropical regions, where the luxuriant foliage of the forests furnishes them with a safe retreat, and where there is an abundance of food suited to their taste. This tendency to avoid the society of man has made the study of their habits much more difficult, and but little has been recorded except that which pertains to the more Northern forms.

The food is chiefly insects, especially in the larval form, and berries. To some extent they also feed upon the buds of flowers. Mr. Chapman tells us that "the tropical species are of a roving disposition, and wander through the forests in search of certain trees bearing ripe fruit, near which they may always be found in numbers." Their nests are shallow, and the eggs, usually three to five in number, are greenish-blue in color, speckled with brown and purple.

The Louisiana Tanager is a Western species, ranging from British Columbia on the north to Guatemala on the south, and from the Missouri River to the Pacific Coast. Our illustration well represents the male. The female, like its sister tanagers, is plainly colored, but still beautiful. It

LOUISIANA TANAGER.
(Piranga ludoviciana.)
Life-size.

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SCARLET TANAGER.
Life-size.

is olive green, with the underside yellowish. The feathers of the wings and tail are brown, edged with olive. It resembles the female scarlet tanager. The young are at first like the female. Then appears the black of the back, mixed with some olive and a slight tinge of red on the head.

It would seem that its name is a misnomer, as it is not found in the State of Louisiana.

SCARLET TANAGER

Most tanagers are tropical, inhabiting the densely foliaged trees about the equator. The Scarlet Tanager summers in the United States and southern Canada, wintering in Central and South America. The male bird, with fire-red body and jet-black wings and tail, is our most brightly plumaged bird, while the female has a sober plumage of dull olive green. The scarlet tanager is a comparatively common bird from Iowa and Minnesota eastward to New York and the Canadian provinces. Decidedly a warm-weather bird, it does not arrive in the Great Lakes region until about May 1st. These birds are highly beneficial, as they destroy countless numbers of worms, moths, caterpillars, and beetles, while partaking of some small fruits and berries.

The song of the male is clear and pleasing, uttered rather distinctly as a rhythmical carol suggesting that of the robins. Timbered hillsides, orchards, and shade trees are favorite nesting sites. The nest, composed of coarse stems and grass, lined with finer material of the same, is attached to a cluster of small twigs on a limb of a deciduous tree,

usually within twenty feet of the ground. The three or four eggs are bluish-green, spotted distinctly with brown.

THE SUMMER TANAGER*

This specimen is also called the Summer Redbird or Rose Tanager, and is found pretty generally distributed over the United States during the summer months, wintering in Cuba, Central America, and northern South America. As will be seen, the adult male is a plain vermilion red. The plumage of the female is less attractive. In habits this species resembles the scarlet tanager, perhaps the most brilliant of the group, but is not so retiring, frequenting open groves and often visiting towns and cities.

The nesting season of this charming bird extends to the latter part of July, but varies with the latitude and season. Bark strips and leaves interwoven with various vegetable substances compose the nest, which is usually built on a horizontal or drooping branch, near its extremity, and situated at the edge of a grove near the roadside. The eggs are beautiful, being a bright, light emerald green, spotted, dotted, and blotched with various shades of lilac, brownish-purple, and dark brown.

Chapman says the Summer Tanager may be easily identified, not alone by its color, but by its unique call-note — a clearly enunciated "chicky-tucky-tuck." Its song bears a general resemblance to that of the scarlet, but to some ears is much sweeter, better sustained, and more musical. It equals in strength, according to one authority, that of the robin, but is uttered more hurriedly, and is more "wiry."

SUMMER TANAGER.
(Piranga rubra).
½ Life-size.

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PURPLE MARTIN.
Life-size.

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The summer tanager is to a greater or less extent known to farmers as the red bee-bird. Its food consists largely of hornets, wasps, and bees.

PURPLE MARTIN

The Purple Martin, with his near relative and subspecies, called the Western martin, occupies about the entire portion of temperate North America, breeding as far north as Newfoundland and Saskatchewan.

The plumage of the male is deep purple; as the iridescent feathers glisten in the sun with a beautiful metallic effect suggestive of the head and throat of the bronzed grackle.

Martins are strong fliers, and successfully ward off the attacks of the English sparrows and the kingbird. Sociable birds, frequently nesting in colonies, they readily adapt themselves to "apartment" life by accepting as nesting sites bird cotes which are erected for their accommodation. Such houses should be furnished more often. Children may be encouraged to make and put up these houses. The birds also nest in the structural work of bridges and in the crevices and under the roofs of buildings. They even place the nests on the crossboards above the hanging arc lights which are lowered daily by the electricians. Martins are decreasing in numbers in the North, and efforts should be made to keep this valuable bird with us by furnishing them nesting sites.

The food is entirely insectivorous, and these highly useful birds are most active shortly before sunrise and near

sunset. One observer noted that the parent birds visited the young more than two hundred times a day, carrying insect food to them. Martins twitter and chatter in an agreeable way, and the song of the male as he seems to wax his bills together is not grating in quality, as we might suppose, but exceedingly pleasing. I have often wondered why so little is said by naturalists about the song of the purple martin.

The nests are composed chiefly of grass and feathers, and contain four or five pure white eggs, laid in June. The birds are with us from the latter part of April until August.

BARN SWALLOW

The Barn Swallow is probably the most generally distributed of our swallows, as several pairs may usually be found about the average rural home, nesting in barns and outbuildings. They formerly used rock caves and cliffs. Though sociable in habits, they do not colonize like the cliff swallow. These birds range north to Greenland and Hudson Bay, breeding throughout most of the range, and wintering in Central and South America.

The bird is of great economic value, as the food is entirely insectivorous, being captured while the birds are on the wing. Too many ignorant farmers knock down the nests and drive away these true friends. The deep forked tail serves as the best means of distinguishing this swallow from martins, swifts, and other rapid fliers. The song of the male is a mild little twitter, uttered from the rafters or while he is swiftly pursuing insects over the meadows.

BARN SWALLOW.
⅞ Life-size

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FROM COL. CHI. ACAD. SCIENCES.

609

TREE SWALLOW.
(Tachycineta bicolor Vieill.)
Life-size

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Swallows are often called the first masons. The nests are placed about buildings, preferably inside on a rafter or beam. Mud of a clay-like composition mixed with blades of grass and hay form the exterior of the nest, in which, when available, feathers are used as a lining. The birds frequently allow one section of the nest several days to set before adding fresh material.

Four to six pearly-white eggs, sprinkled with dots of brown or lilac, are laid late in May or early in June. The eggs hatch in ten days, and the young leave the nest when they are about sixteen days old.

TREE SWALLOW

Tree Swallows occur throughout eastern North America, principally in the Middle and Northern States, ranging north to Labrador and Alaska, breeding locally throughout the range, and wintering from South Carolina southward.

This bird is frequently called the white-bellied swallow, as the under parts are pure white, a field mark which readily distinguishes it from our other swallows. The upper parts are steel blue in color, the feathers having a glossy metallic luster.

The feet of the tree swallows show little development. The birds are seen perching on the naked branches of trees more frequently than are our other swallows. The note is a little twitter, indicative of little demonstration, and the only vivacious movements are those made in flight, as the birds possess perfect control when in the air, and are most at home on the wing.

The tree swallows do not nest in colonies, like the cliff or bank swallows, but flock early in August, when immense numbers congregate on the marshes and, in company with the bank swallows, move leisurely southward as one great army of insect catchers.

The nests are commonly placed in hollow trees and stumps; usually some old, abandoned excavation of a woodpecker is used, though some accept houses made for them by man. Nesting sites near the water are preferred. Often a decayed stump standing in the midst of a vast marsh is selected, and the cavity is warmly lined with grass and feathers. Four to seven white eggs are laid.

THE VIOLET-GREEN SWALLOW*

The Violet-green Swallow is one of the most beautiful of the Hirundinidæ, or family of swallows. There are about eighty species of the family, and they are world-wide in their distribution. These tireless birds seem to pass almost the entire day on the wing in pursuit of insects, upon which they feed almost exclusively. They can outfly the birds of prey, and the fact that they obtain their food while flying enables them to pursue their migrations by day and to rest at night.

The violet-green swallow frequents the Pacific Coast from British Columbia on the north, southward in the winter to Guatemala and Costa Rica. Its range extends eastward to the eastern base of the Rocky Mountains.

Its nest, which is made of dry grass and copiously lined with a mass of feathers, is variously placed. Sometimes the

VIOLET-GREEN SWALLOW.
(Tachycineta thalassina.)
⅘ Life-size.

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BOHEMIAN WAXWING.
(Ampelis garrulus).
About Life-size.

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knot-holes of oaks and other deciduous trees are selected. They have also been known to use the deserted homes of the cliff swallow. Mr. Allen states that they "nest in abandoned woodpeckers' holes, but at the Garden of the Gods and on the divide between Denver and Colorado City, we found them building in holes in the rocks." This swallow is quite common in western Colorado, where they have been observed on the mountain sides at an altitude of eight to over ten thousand feet. In "The Birds of Colorado," Mr. W. W. Cooke says: "A few breed on the plains, but more commonly from six to ten thousand five hundred feet" above the level of the sea. He also adds that they begin laying late in June or early in July, and desert the higher regions in August and the lower early in September.

The notes of this exquisite bird are described by an observer who says that they "consist of a rather faint warbling twitter, uttered as they sit on some low twig, their favorite perch; when flying about, they seem to be rather silent."

The violet-green swallows, like their sister species, usually nest and migrate in colonies.

BOHEMIAN WAXWING

Mr. Dawson writes: "Perhaps we shall never know just why some of these gentle hyperboreans spend their winters now in New England, now in Wisconsin, now in Washington, or throughout the northern tier of States at once. Their southward movement is doubtless induced by hunger, and the particular direction may be determined in part at

least by the prevailing winds. They are likely to appear in the limits of their range any winter. Usually they appear in flocks of several hundred individuals.

"The Northern waxwing is a bird of unrivaled beauty, even surpassing that of the cedar waxwing, which it closely resembles in appearance and habits. When with us it feeds by preference upon the berries of the mountain ash and the red cedar, and more rarely upon persimmons. Its life history is as yet imperfectly known, although it has been found breeding near the Yukon and Anderson Rivers."

CEDAR WAXWING

The Cedar Waxwing is so called because of red tips, like drops of sealing wax, on secondaries and sometimes on tail.

The entire continent of North America is inhabited by either the cedar or Bohemian waxwings, but the eastern and central portions from Labrador south to Central America are the principal roving grounds of the "cedar bird." Here they may be met with throughout the year, provided their food supply of berries, seeds, and buds is sufficient to sustain the flock until spring when the hordes of insects appear.

The cedar and Bohemian waxwings are the only representatives of this interesting sub-family, Ampelinæ. The former species is distinctly an American bird, but the range of the Bohemian waxwing includes the northern portions of America, Europe, and Asia.

The various hues in a cedar waxwing's plumage, like

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CEDAR WAXWING.
½ Life-size.

FROM COL. GERARD A. ABBOTT.

NEST OF THE CEDAR WAXWING.
(Ampelis Cedrorum).
About Life-size.

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the velvety effect in shades and colors of the harlequin duck and Wilson's phalarope, are soft delicate tones. To appreciate this exquisite combination it is essential that the birds themselves be seen.

A sociable bird with an eccentric disposition, the cedar bird, or cherry bird, wanders about the country in flocks of from five to fifty. The raids made by a company of these birds when they descend upon orchard and shade trees which are infested by the canker-worm or elm leaf beetle has proven a blessing to many a horticulturist whose trees they often save. When the early Richmond cherries ripen, the "cherry birds" gather about the trees in numbers. Overlooking both the past and future, the farmer often shoots these valuable birds. When the cherry season is over, the birds gradually pair off and withdraw from the flock, preparatory to nesting in some coniferous shade tree, bush, or orchard tree.

In southern Michigan I observed the birds breeding not earlier than July 20, and many nests are not occupied before August 5. Nest-building is commenced earlier in the Southern States, and young cedar waxwings may be seen in June.

On August 4, 1896, I found a nest of grass, stems, and wool, situated fifteen feet up in the crotch of an apple tree. The crest of a cherry bird was visible above the rim of the nest. Ascending to the nest, I found five bluish slate-colored eggs speckled with black and with under shell markings of pale blue, which gave a cloudy or smoky appearance to the eggs. Another nest, holding four incubated eggs, was discovered on August 16, near the former nest. The peculiar colors of the eggs render them inconspicuous.

THE GREAT NORTHERN SHRIKE*

The Great Northern Shrike, more commonly, perhaps, called Butcher Bird, comes from northern British-American territory to the latitude of Chicago in the fall, and stays through the winter, when it leaves for the vicinity of Fort Anderson, in the crown territories, to build its nest. This is placed in a low tree or bush, and is composed of twigs and grasses. The eggs number four or five. During the winter the shrike's food consists almost entirely of small birds, with an occasional mouse to add variety. In the summer its diet is made up chiefly of the larger insects, though at times a small snake is caught and eaten with apparent relish.

The great Northern shrike has the habit of impaling the bodies of its victims upon thorns or of hanging them by the neck in the crotch of two small limbs. Its perch is the very tiptop of a tree, from which it can survey the surrounding country and mark out its victims with its keen eye.

It is larger and darker than its brother, the loggerhead. It is also a much better singer, its notes being varied and almost entirely musical, though occasionally it perpetrates a sort of harsh half croak that ruins the performance.

The close daily observance of the bird involves some little sacrifice for the person whose nature is tempered with mercy. The shrike is essentially cruel. It is a butcher pure and simple, and a butcher that knows no merciful methods in plying its trade. More than this, the shrike is the most arrant hypocrite in the whole bird calendar. Its notes are

GREAT NORTHERN SHRIKE.

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LOGGERHEAD SHRIKE.
(Lanius ludovicianus).
About ½ Life-size.

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alluringly gentle, and, to paraphrase a somewhat famous quotation, "It sings and sings, and is a villain still."

LOGGERHEAD SHRIKE

The Loggerhead Shrike, Butcher Bird, or Mouse Hawk, appears from Florida northward to New York and westward to Indiana; from the latter State westward to the Plains and north into Michigan, Wisconsin, and Minnesota, we have a closely allied species described as the migrant shrike; another sub-species, a still lighter form, ranging west to the Pacific Coast, is called the California shrike.

Shrikes are solitary and are seldom abundant, but are easily observed because of their habit of frequenting conspicuous places. They resort about thorny hedges along highways, so that occasionally several pairs may be observed within a distance of half a mile along a country road, and then one may not encounter another for several miles. Their peculiar flight should enable the observer to recognize the birds, as the white patches on the wings and tail are conspicuous field marks.

Commonly known as the butcher bird, these savage, carnivorous birds eagerly devour the brains of their victims. On thorns and barbed-wire fences are impaled the bodies of sparrows and mice, and often grasshoppers and snakes meet a similar fate. Shrikes possess a hooked beak, suggestive of the hawk, but they have weak feet, as do other perchers. This largely accounts for the peculiar habit of impaling the prey to be held while eaten. They perch in a manner similar to the flycatchers, and instead of pursuing their prey,

they remain patiently in a conspicuous place awaiting the approach of some tempting morsel, when they suddenly descend upon the unsuspecting victim. The shrike has a habit of accumulating a store of birds or insects on barbs or thorns, even after his hunger is satisfied. It is supposed they return if hungry, though they seem usually to have fresh meat for their meals.

The loggerhead or migrant shrike is with us in the Great Lakes region from early March to October. These birds seem to prefer comparatively open, level areas, and frequently are seen perching upon fences and telephone wires. In many cut-over regions, especially if placed under cultivation, these birds are breeding in greatly increased numbers. These prolific birds lay five or six eggs, occasionally rearing two broods in a season. They invariably attempt to rear a brood if the first or even the second setting is destroyed.

The shrikes nest early, frequently sitting upon their eggs during the cold days of April, when the wind sweeps with full force across the prairies. They prefer sites in hedges or thorn bushes. The nests are warmly built of vegetable fibers, stems, and hay, warmly lined with Indian hemp and feathers.

RED-EYED VIREO

The Red-eyed Vireo, probably the commonest of the vireos, inhabits North America as far west as the Rockies, ranging from the Gulf to Hudson Bay. All members of the vireo family are natives of America, though most are

122

RED-EYED VIREO.
$\frac{9}{10}$ Life-size.

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FROM COL. GERARD A. ABBOTT

NEST OF THE RED-EYED VIREO.
(Vireo olivaceus).
About Life-size.

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inhabitants of tropical and sub-tropical regions. The prevailing colors of these birds are various shades of light green and gray, which harmonize admirably with their surroundings.

How many people have I encountered who ask me to name "the bird that sings all day long in the shade trees about our lawn." Catch a glimpse of the red-eyed songster and you will be surprised to learn that the glad volume of song which is entertaining you throughout the day and evening during the torrid heat of July and August issues from the throat of so small a bird. Seek an introduction to this vireo, and you will find him equally curious to see you. As to forming an acquaintance with him, that is another matter, as he commences to sing in a manner which would indicate from the rising inflection of his voice that a closer acquaintance is not desired.

These birds are decidedly insectivorous, and devour great quantities of injurious worms and insects and their larvæ.

The nests of the different species do not differ greatly from each other in construction or situation. In country places where huge shade trees overhang the village streets the vireos revel among the foliage, constructing their pensile nests among the drooping branches of some elm, sycamore, or maple.

A nest of three eggs in my collection, taken May 15, 1896, is composed of bark, fibers, string, and down, lined with long, coarse hairs. The nest was suspended at the end of a maple limb, ten feet from the trunk of a tree, twenty-five feet from the ground. Other names of this bird are Red-eyed Greenlet, Red-eyed Flycatcher, and the Preacher.

THE WARBLING VIREO*

The vireos are a family of singers and are more often heard than seen, but the Warbler has a much more musical voice and of greater compass than any other member of the family. The song ripples like a brook, floating down from the leafiest tree-tops. It is not much to look at, being quite plainly dressed in contrast with the red-eyed cousin, the largest of the vireos. In nesting time it prefers seclusion, though in the spring and mid-summer, when the little ones have flown, and nesting cares have ceased, it frequents the garden, singing in the elms and birches, and other tall trees. It rambles as well through the foliage of trees in open woodland, in parks, and in those along the banks of streams, where it diligently searches the under side of leaves and branches for insect life, "in that near-sighted way peculiar to the tribe." It is a very stoic among birds, and seems never surprised at anything, "even at the loud report of a gun, with the shot rattling about it in the branches, and, if uninjured, it will stand for a moment unconcerned, or move along, peering on every side amongst the foliage, warbling its tender, liquid strains."

The nest of this species is a strong, durable, basket-like fabric, made of bark strips, lined with fine grasses. It is suspended by the brim in slender, horizontal forks of branches, at a great height from the ground.

"The eggs are white with a few brown specks on the large end. These birds breed throughout the United States and southern Canada."

WARBLING VIREO.
Life size.

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YELLOW-THROATED VIREO.
½ Life-size.

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THE YELLOW-THROATED VIREO*

The popular name of this species of an attractive family is Yellow-throated Greenlet, and our young readers will find much pleasure in watching its pretty movements and listening to its really delightful song whenever they visit the places where it loves to spend the happy hours of summer. In some respects it is the most remarkable of all the species of the family found in the United States. "The Birds of Illinois," a book that may be profitably studied by the young naturalist, states that it is decidedly the finest singer, has the loudest notes of admonition and reproof, and is the handsomest in plumage, and hence the more attractive to the student.

A recognized observer says he has found it only in the woods, and mostly in the luxuriant forests of the bottom lands. The writer's experience accords with that of Audubon and Wilson, the best authorities in their day, but the habits of birds vary greatly with locality, and in other parts of the country, notably in New England, it is very familiar, delighting in the companionship of man. It breeds in eastern North America, and winters in Florida, Cuba, and Central America.

The vireo makes a very deep nest, suspended by its upper edge, between the forks of a horizontal branch. The eggs are white, generally with a few reddish-brown blotches. All authorities agree as to the great beauty of the nest, though they differ as to its exact location. It is a woodland bird, loving tall trees and running water, "haunting the same

places as the solitary vireo." During migration the yellow-throat is seen in orchards and in the trees along sidewalks and lawns, mingling his golden colors with the rich green of June leaves.

BLUE-HEADED VIREO

The Blue-headed, or Solitary, Vireo ranges from the Atlantic west to the Great Plains, practically from the southern tier of States northward, wintering from Florida to Brazil. Dr. Elliot Coues describes its song as "pitched in a higher key than the other vireos." It is by no means the recluse that its name would imply. Mr. Bradford Torrey writes: "A bird of winning tameness. Wood bird as it is, it will sometimes permit the greatest familiarities. I have seen two birds which allowed themselves to be stroked in the freest manner while sitting on the eggs, and which ate from my hand as readily as any pet canary."

The blue-headed is one of the first vireos to arrive in the spring and last to depart in the fall. It sings at its work, and many consider it the finest singer of the family.

The pensile nest of pine needles, plant down, etc., suspended from a forked branch five to ten feet up, usually contains three or four eggs.

WHITE-EYED VIREO

The White-eyed Vireo ranges throughout eastern United States from Florida to the northern tier of States, wintering from Florida south.

"Vireos are valuable gleaners, and may be distinguished

BLUE-HEADED VIREO.
(Vireo solitarius).
$\frac{3}{5}$ Life-size.

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WHITE-EYED VIREO
(Vireo noveboracensis.)
About Life-size.

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from other tree-inhabiting, greenish birds of similar size by their habit of carefully exploring the under surfaces of leaves and the bark, including the various crevices. These highly musical little birds have songs and call notes which may be quickly recognized, once they are known.

"Unlike our other vireos, the white-eyed lives in the lower growth. He is, therefore, nearer our level, and seems to trust us more than do the others that call from the tree-tops. He has a variety of musical calls, and sometimes may be heard softly singing a song composed largely of imitations of the notes of other birds.

"The white-eyed may readily be known from the red-eyed and warbling vireos by the white bars across the tips of its wing coverts. In this respect it greatly resembles the yellow-throated, but it is to be distinguished by its smaller size, white iris, and white breast, only the sides of the breast being tinged with yellow." (Chapman.)

In construction the nest is very similar to that of our other vireos, but Wilson, the ornithologist, named this bird "Politician," because it frequently uses bits of newspaper in the construction of its nest.

CHAPTER XVIII

WARBLERS

WARBLERS are found in America only, and with a few exceptions are arboreal, hence the term "wood warblers." They are almost exclusively insectivorous, hence highly migratory and useful. More than all other birds, are they the victims of lighthouses and electric lights in cities, as they migrate by night. They are more or less gregarious and sociable when migrating, several species freely mingling in flocks. The last to arrive in the spring, they are the first to leave in the fall. They may be plentiful one day, and have entirely disappeared the next. They are mostly bright-plumed, but only a few are skilled as vocalists. The amateur nature student is apt to confuse finches and warblers. The tide of warblers passes through the United States when the fruit trees are in bloom, and the birds are of great benefit in destroying insects which are then awaiting the opportunity to attack the young fruit.

In procuring food, some take insects from exposed parts of twigs and leaves, some carefully search the under parts of leaves and the cracks and crevices of trunk, etc., while others catch a large part of their food on the wing. Bird lovers take delight in studying them through opera glasses, constantly finding new species at times of migrations.

"What limitless possibilities in a flock of warblers! Who can say what rare species may be among them?"

BLACK AND WHITE WARBLER

The range of this warbler is eastern North America, breeding north to Fort Simpson, and wintering in Florida and South.

"Although placed at the head of the family of wood warblers, this modest bird comes more naturally into comparison with creepers and nuthatches. He clings and creeps, or rather hops, along the bark of the trunk and the larger branches. He lacks much, it is true, of being the methodical plodder that the brown creeper is; he covers a great deal more surface in a given time, and is content with a rather superficial examination of any given territory. Then again he secures variety, not merely by tracing out the smaller limbs, but by moving in any direction — up or down or sidewise — or even by darting into the air now and then to capture an insect. Not infrequently he may be seen gleaning from the bark of bushes and saplings near the ground, or again in the tops of the very tallest elms. Apple trees are cherished hunting grounds, and it is here that one may cultivate a really intimate acquaintance.

"The Black and White is among the earlier migrant warblers, coming as it does during the last week in April and before the leaves are well out. At this time it is quite a conspicuous bird, in spite of the fact that its striped coat roughly approximates to the lights and shadows in the bark of a tree; but it is usually silent. When it does speak, a few days later, its voice is a wiry, squeaking song, likely to be lost to ear altogether amid the full chorus of warbler

BLACK AND WHITE CREEPING WARBLER.
About Life-size

PROTHONOTARY WARBLER.
(Protonotaria citrea).
About Life-size.

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week; but when the rush is over the singer will be heard. At best the song is a tiny sibilation of no great carrying power: 'Squeech, weech, weech, weech, weech,' lisped out in two keys, is one rendering." (Dawson.)

PROTHONOTARY WARBLER

The range of this exquisite warbler is eastern United States, breeding from the Gulf to central Illinois and Virginia, less common east, and wintering in the tropics.

At first glance we look upon these birds as natives of the tropics, because of the brightness of plumage of the males. They confine themselves to river bottoms and usually take possession of hollow stumps where the tree swallows and chickadees are their neighbors. They have not the northerly range the other warblers possess, but wander occasionally to the Great Lakes region. The birds are more common in Iowa, Illinois, and Indiana, breeding in the swamps, especially along the Illinois and Kankakee rivers.

Their alarm note is a distinct "peep," reminding one of the solitary sandpiper or water thrush. When the birds arrive from the South, late in April, they frequent the tree-tops, but gradually descend to the willows, and early in May they have taken possession of some hollow, usually not to exceed five feet above the ground or water.

The birds are decidedly insectivorous, and the regions inhabited by them furnish an unlimited supply of small winged insects, mostly injurious; hence the bird is highly useful.

Four to six white eggs are laid in a nest composed of

moss, a few leaves, and stems. The markings are of lilac, and various shades of red clustered at the larger end.

SWAINSON'S WARBLER*

Swainson's Warbler has a peculiar and interesting history. This species has the honor of being discovered, and then practically lost to sight for about forty years.

In 1832, the Reverend John Bachman discovered this warbler, near Charleston, South Carolina. The specimens were placed in the hands of Audubon, who recognized that a new species had been found, and gave it the Latin name that it now bears. In his "Birds of America," Audubon quotes the following record of Mr. Bachman: "I was first attracted by the novelty of its notes, four or five in number, repeated at intervals of five or six minutes apart. These notes were loud, clear, and more like a whistle than a song. They resembled the sounds of some extraordinary ventriloquist in such a degree that I supposed the bird much farther from me than it really was; for after some trouble caused by these fictitious notes, I perceived it near to me, and soon shot it.

"The form of its bill I observed at once to differ from all other known birds of our country, and was pleased at its discovery."

Even at the present time, Swainson's warbler may be considered common in only certain localities within its range, which may be given as including the southern United States northward to North Carolina and Missouri and east of Texas. It winters in the tropics.

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SWAINSON'S WARBLER.
(Helinaia swainsonii).
About Life-size.

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451

WORM-EATING WARBLER.
(Helmitherus vermivorus.)
About Life-size.

The habits of this warbler make it a difficult bird to find. It is fastidious, and as Mr. Brewster says, "four things seem indispensable to his existence, viz.: water, tangled thickets, patches of cane, and a rank growth of semi-aquatic plants." Such localities are not only difficult to find, but also uninviting fields to explore.

"It is ventriloquial to such a degree that there is often great difficulty in tracing it to its source. You advance confidently enough at first, when suddenly the sound comes from behind you. Retracing your steps, the direction is again changed. Now it is to the right, shortly after to the left; one moment in the tree-tops overhead, the next among the bushes almost at your feet."

THE WORM-EATING WARBLER*

The Worm-eating Warbler is much more retiring and less often noticed than most of the species of warblers. Unlike many of the species, its range does not reach to the Northern coniferous forests. Passing the winter in the countries bordering the Gulf of Mexico, it migrates in the spring throughout the eastern United States, breeding as far north as Illinois and Connecticut. Its dull color and retiring and shy disposition eminently fit it for its chosen hunting grounds—the deep and thick woods, bordering ravines, where there is an abundant undergrowth of shrubs.

Its song closely resembles that of the chipping sparrow, and may even mislead the trained field ornithologist. As it deliberately hunts for insects among the dry leaves on the

ground or on the lower branches of shrubs, its slow motions are more like those of the vireo than of a warbler.

While walking through woods frequented by this rare little warbler, the experiences of Mr. Leander Keyser are that of all who have had the pleasure of meeting it among the trees. He says: "Suddenly there was a twinkle of wings, a flash of olive-green, a sharp chirp, and then before me, a few rods away, a little bird went hopping about on the ground, picking up dainties from the brown leaves. It was a rare worm-eating warbler. The little charmer was quite wary, chirping nervously while I ogled him—for it was a male, and then hopped up into a sapling, and finally scurried away out of sight."

It builds its nest on the ground among the dead leaves and under the protecting shade of large-leaved herbage or low shrubs. The nest is rather large for the size of the bird. Grasses, small roots, the fibrous shreds of bark, and a few dried leaves are used in its construction.

THE BLUE-WINGED YELLOW WARBLER*

Not a great deal is known about many of the warblers, and comparatively little has been observed of this member of the very large family, comprising more than one hundred species. This specimen is also recognized by the name of the Blue-winged Swamp Warbler. Its habitat is eastern United States, chiefly south of forty degrees and west of the Alleghanies, north irregularly to Massachusetts and Michigan, and west to border of the Great Plains. In winter it lives in eastern Mexico and Guatemala.

BLUE-WINGED YELLOW WARBLER.
Life-size.

261

GOLDEN-WINGED WARBLER.
Life-size.

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It has been pointed out that the name of this bird is misleading, as the blue of the wing is dull and inconspicuous, and not blue at all in the sense in which this color distinction is applied to some other birds. When applied to the warblers, it simply means either a bluish-gray, or slate, which seems barely different from plain gray at a short distance.

In half-cleared fields which have grown up to sprouts, and in rich open woods in the bottom-lands, where the switch-cane forms a considerable proportion of the undergrowth, the Blue-winged Yellow Warbler is one of the characteristic birds, says Ridgway. The male is a persistent singer during the breeding season, and thus betrays his presence to the collector, who finds this, of all species, one of the easiest to procure. His song is very rude. The nest is built on the ground, among upright stalks, resting on a thick foundation of dry leaves. The eggs are four or five, white, with reddish dots. The food of the warbler consists almost wholly of spiders, larvæ, and beetles, such as are found in bark, bud, or flower. The birds are usually seen consorting in pairs. The movements of this warbler are rather slow and leisurely.

GOLDEN-WINGED WARBLER

The range of the Golden-winged is the eastern United States, breeding from Indiana and northern New Jersey north to Michigan, southern Ontario, and Vermont, and south along the Alleghanies to South Carolina. It winters in South America.

"The first glimpse of a new warbler is always memorable, but an introduction to this dashing young fellow is especially so. You may have looked for years in vain, when suddenly one May morning you come upon him in the swampy woods, restless, full of life, and in the highest spirits. The young hickories are just about to open their reluctant palms, the gallant mounts a high bud, throws back his head, and sputters out 'Zee, zee, zee, zee, zee,' in double time in comparison with his drowsier relative, the blue-wing. Without waiting for applause he charges after a vagrant fly, snaps him up, and takes to a sweet-smelling spice-bush for another round of music. A passing vireo, which, by the way, was born thereabouts, is fiercely assailed by the swaggering stranger, and retires in confusion." (Dawson.)

The nest of stems, pine needles, leaves, and grasses is placed in a clump of weeds, tussock of grass, or small shrub. The situations most liked are woodland pastures or weedy fields. The four or five eggs are white, speckled with dark brown and purple.

THE NASHVILLE WARBLER

The Nashville Warbler is common during the migrations in many parts of the country. Its range extends from the Atlantic Ocean west to eastern Nebraska and north into Labrador and the fur countries, occasionally wandering even to Greenland. It winters in the tropics south of the United States.

In the northward migration it reaches Texas about the third week in April and Manitoba near the end of the first

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245

NASHVILLE WARBLER.
(Helminthophila rubricapilla).
Life size.

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ORANGE-CROWNED WARBLER
(Helminthophila celata).
Life-size.

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week in May, thus passing completely across the country in about three weeks.

The song has been compared to that of the chestnut-sided warbler and to the chipping sparrow combined. To my ear the Nashville warbler's song is enough unlike the song of any other bird to be easily recognized after a single hearing. My note book renders it thus: "K tsip, k tsip, k tsip, k tsip, chip ee, chip ee, chip ee, chip."

In common with the other members of this genus, the Nashville warbler nests on the ground, usually in a spot well protected by dried grasses and other litter of the previous year's growth, often in a tangle of shrubs, ferns, and bushes. The nest is sometimes sunk flush with the surface, and is composed of grasses, mosses, pine needles, strips of bark, and leaves, lined with finer material of the same sort and with hair-like rootlets, the composition varying with the locality. The eggs are pure white or creamy-white, marked with spots and dots of reddish-brown and the usual lilac shell-markings, which are grouped more or less around the larger end. They are four or five in number, and average about .61 x .48 of an inch. LYNDS JONES.

THE ORANGE-CROWNED WARBLER*

The Orange-crowned Warbler is one of those warblers which is quite erratic in its appearance in any given locality during its migrations; some seasons it may be common and in other seasons its presence may not be noted at all. It breeds in the interior of British America, in the Rocky Mountain regions, and as far northward as the Yukon dis-

trict of Alaska. In its migrations it passes through the Mississippi Valley, being very rare in those states bordering the Atlantic Ocean north of Virginia. It winters in the South Atlantic and Gulf States and in Mexico, and is a common species in Florida during this season.

This little warbler is constantly in motion during the daylight hours in the foliage of the higher tree branches. Seemingly to satisfy its tireless energy, it frequently stops its hunt for insects to utter its simple song. Mr. Ernest Thompson, in his *Birds of Manitoba,* describes this song as sounding like chip-e, chip-e, chip-e, chip-e, and says: "Its song is much like that of the chipping sparrow, but more musical and in a higher key." To Dr. Wheaton its refrain is a "loud, emphatic, and rather monotonous song, resembling, as nearly as he can describe, the syllables chiky-tick-tick-tick-tick; this song was louder and more decidedly emphasized than that of any member of the genus with which he was acquainted." Colonel Goss hears in the song "a few sweet trills uttered in a spirited manner and abruptly ending in a rising scale."

Its nest is usually built on the ground, in clumps of bushes and quite hidden by dried leaves. The nest is large for the size of the bird, and is constructed with plant stems, strips of fibrous bark, and dry grasses loosely woven together. Not infrequently, also, leaves are used in the construction of this outer wall. The eggs are white with rufous or cinnamon-brown spots or specks which are more numerous at the larger end. They are four or five in number and are deposited about June first. In size the eggs average .63 in. by .49 in.

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TENNESSEE WARBLER.
(Helminthophila peregrina).
Life-size.

THE TENNESSEE WARBLER*

During the spring and fall migrations the Tennessee Warbler is a common bird in many localities of the eastern United States. Its breeding range extends from Minnesota, New York, and northern New England northward to the latitude of Hudson Bay, and it winters in Mexico and Central America.

This "nymph of the woodland" is a very active bird and extremely dextrous in catching insects which it seeks in the foliage of trees, both of the forest and the orchard. It seems to be especially fond of the willow trees and shrubs that grow on the banks of water-courses, where there is an abundance of insect life, and it is not an uncommon visitor in the denser foliage of tamarack swamps. While it prefers the borders of an open forest, it not infrequently visits, during its fall migration, cornfields and vineyards, and may even be seen in large gardens.

Constantly alert, the Tennessee warbler flutters through the outer foliage of trees, where, with its sharp and slender bill, which is admirably adapted for the purpose, it picks innumerable small insects from the leaves and twigs.

Its song is not easily described. By many the song has been likened to that of the Nashville warbler, but Mr. Bradford Torrey says that the two are so decidedly different as never for a moment to be confounded, though the former is suggestive of the latter. The Tennessee's song is certainly much shriller than that of the Nashville warbler. Mr. Ernest Thompson has described its song as beginning "with

a note like chipiti, chipiti, repeated a dozen or more times with increasing rapidity, then suddenly changed to a mere twitter."

The Tennessee warbler nests in low bushes or upon the ground, building its home with fine fibers and grasses interwoven with mosses and lined with hair.

PARULA WARBLER

The range of the Parula Warbler is eastern North America, breeding from the Gulf to Canada and wintering in Florida and south.

The head and throat of this warbler is deep bluish-gray, becoming much blacker on the breast. This appearance has suggested the name parula warbler. Parula warblers have been subdivided and are described as northern parula and the parula. As usual, we find the larger or hardier bird visits the more rigorous climates, as the northern parula, inhabiting the states bordering the Great Lakes and New England, is slightly larger than the parula which may be found south of the Ohio River, ranging from the Atlantic Coast to Texas. Both varieties are frequently called the blue yellow-backed warbler.

The food consists of spiders, small insects, including flies and various other winged forms, and caterpillars, which they are very industrious in gathering from underneath leaves and inconspicuous branches of the trees they frequent. Like other warblers, they are highly useful to horticulture.

Aside from the cerulean warbler, probably no other

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428

PARULA WARBLER.
(Compsothlypis americana).
Life-size.

231

CAPE MAY WARBLER
(Dendroica tigrina).
Life-size.

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member of this family lives at so great an elevation above the ground, except those forms which are partial to coniferous trees. The peculiar song ends in a little screech.

Sometimes these birds nest in small colonies. Like the cedar waxwing and dickcissel, they are irregular residents, breeding in some parts during certain years and perhaps they are not seen again in the same locality for several seasons.

Their manner of nest-building is unique, as they are partial to trees which are draped with usnea moss. Among the hanging festoons of this "Spanish moss" the little birds construct a cavity, into which they carry soft vegetable substances, such as thistle-down and the "cotton" of the cottonwood. The nests are difficult to detect unless one is fortunate enough to observe the birds when they are entering these long appendages. Usually four white delicately wreathed eggs are laid in May.

THE CAPE MAY WARBLER

The Cape May Warbler belongs among the less common species, but may be common for a day or two during the height of the migration. It is very fond of orchards, where it feeds among the foliage, snatching an insect here, a larva there, and cleaning the bundle of eggs from the leaf over yonder with an untiring energy. They also associate more or less with the other warblers in the woods. They are of great value to the fruit grower.

This species is found from the Atlantic Coast west to the plains and north to Hudson's Bay, passing the winter in

the tropics. It breeds from northern New England to Hudson's Bay, and probably in northern Minnesota. The nest is built in a low bush in a wooded pasture or open woodland, said to be partially pensile. The nest and eggs are not readily distinguishable from those of several other warblers. The males sing frequently from their perch on the topmost twig of a spruce tree, thus misleading one as to the whereabouts of the female and nest. The song resembles somewhat that of the black and white warbler, but is rather less wiry. It cannot be represented on paper.

The tongue of this bird is worthy of special notice. It is cleft at the tip, and is provided with somewhat of a fringe. This character is not peculiar to this species, but is found in some honey creepers and in at least one foreign family of birds, thus suggesting, at least, the relationship of the warblers as a group. It might be asked, what is the significance of this character as regards feeding habits? Apparently nothing, since the feeding habits and food do not differ from those of other warblers not having the cleft tongue as greatly as the tongues themselves differ in structure. It is apparently an aberrant character developed somewhat at random among groups nearly related, or perhaps a remnant of structure. LYNDS JONES.

YELLOW WARBLER

The range of the Yellow Warbler is North America, except the Southwestern States, breeding north to the Arctic regions and wintering south to South America.

It is decidedly the commonest of the warbler family,

81

YELLOW WARBLER

$\frac{3}{5}$ Life-size.

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BLACK-THROATED BLUE WARBLER.
(Dendroica caerulescens, Gmel).
Life-size.

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and is often called summer yellow bird, or wild canary. The latter name is entirely inappropriate, and should refer to the goldfinch. The yellow warbler is less retiring in his habits than other birds of the family. It commonly nests about our dooryards, along public highways, in parks, in second-growth timber, and in berry patches, and is an interesting and a highly useful bird. Probably no other bird is imposed upon so frequently by the cowbird as is this little warbler. Cowbirds frequently deposit their eggs in the nest of this warbler before the owner is ready to occupy her abode. As a result the parent frequently constructs another bottom to her nest, thereby disposing of the cowbird's egg. Larger birds are strong enough to throw the eggs of the cowbird to the ground. Sometimes the yellow warbler is obliged to construct three basements to her nest in order successfully to lay her own eggs and rear her brood without having to feed the young cowbirds.

The nests are very artistically built of Indian hemp, plant down, and sometimes sheep's wool. The lining is of willow down, cottonwood down, and feathers. The four or five eggs are laid about June 1st. The background is bluish-white and the markings are of dark brown, often forming a wreath about the larger end.

BLACK-THROATED BLUE WARBLER

The "Black-throat" haunts the underbrush, particularly laurel, maple, and oak shrubs. May and September are the months we have this bird with us as a transient through the middle United States. It breeds from the

Adirondack, Alleghany, Green, and White Mountains west through northern Michigan, Wisconsin, and Minnesota, northward to Labrador, wintering in the tropics.

The majority of our warblers have yellow or the bi-colors, orange or green, in some parts of their plumage. This handsome little fellow, like the cerulean, is blue above, but the back, head, wings, and tail are much darker than the corresponding parts in the sky-blue cerulean. The throat is black, lower breast and under parts white. The female has the blue replaced with greenish brown, but either sex may be distinguished by the white patch on the wing.

In 1905 I encountered several males in full song in northern Wisconsin. They were conspicuous while singing as they perched upon low branches overlooking an open spot in the timber, preferably where the ground was uneven. Throwing back their heads and swelling their throats, their song was a dainty imitation in style and quality of that of our dickcissel. Three years later I revisited Butternut Lake, Wisconsin, and after locating a couple of birds singing on a bushy hillside, I carefully searched the maple saplings until I was rewarded by finding a nest. The four pearly-white eggs were beautifully wreathed at the larger end with dull reddish-brown.

MYRTLE WARBLER

The Myrtle Warbler ranges through eastern North America, breeding north of the United States and wintering from the Middle States southward.

The myrtle, or yellow-rumped, warbler is one of the

MYRTLE WARBLER.
Life-size.

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483

AUDUBON'S WARBLER.
(Dendroica auduboni.)
⅗ Life-size.

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largest and commonest of the family. It occurs chiefly east of the Mississippi River, and is represented on the Pacific Coast by an Alpine form known as the Audubon's warbler. While the myrtle warblers differ decidedly in plumage, either sex may be identified by the bright yellow patch at the base of the tail feathers. This is clearly distinguishable when the bird flies or moves about through the brush. Like most of our warblers, the myrtle is a migrant in the Great Lakes region, arriving ahead of most insectivorous birds, even before the foliage is out. While there are no records of myrtle warblers' breeding in the United States, strangely enough, this bird has been found breeding in Jamaica, West Indies.

The birds show a decided preference for coniferous trees, and may be found nesting in cedar and hemlock forests in company with magnolia, Blackburnian, and black-polled warblers.

The nests are constructed of fine stems and grass, lined with a few hairs and feathers.

THE AUDUBON'S WARBLER*

Audubon's Warbler bears the same relation to the western United States that the myrtle warbler bears to the Eastern States. It inhabits the forests and thickets of the West from British Columbia southward as far as Guatemala in winter, and, as Dr. Coues has stated, it has rarely been known to pass to the eastward beyond the line of arboreal vegetation, which marks the easternmost foothills and outlying elevations of the Rocky Mountains.

During its migrations it is often associated with the titmouse and the ruby-crowned kinglet. It may be seen skipping about in the tree-tops, actively engaged in searching for insects, which it will at times pursue in the air. It may be readily distinguished from the myrtle warbler, which it so closely resembles both in habits and actions, by its yellow instead of white throat, which is characteristic of the myrtle warbler.

Its nest is usually built in cone-bearing trees at a variable altitude of from three to thirty feet. These homes are neatly woven and usually constructed of fine strips of bark, pine needles, and twigs. They are lined with fine roots, bark fibers, hair, and feathers. In Colorado it is known to breed on the mountain sides at an altitude of nine or ten thousand feet.

The habits of this little warbler are well portrayed by Mrs. Whitman:

> "The little bird upon the hillside lonely
> Flits noiselessly along from spray to spray."

MAGNOLIA WARBLER

The Magnolia Warbler breeds from Minnesota and Manitoba eastward across the northern tier of States and through southern Canada.

While passing through the middle United States, the magnolia warbler is oftenest found moving quietly through the bushes which line the banks of streams or lean over swampy pools in the depth of the forest, where its brilliance seems fairly to dispel the gloom. If one finds His

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MAGNOLIA WARBLER

Dendroica maculosa

Life-size

106

CERULEAN WARBLER.
(Dendroica caerulea.)
⅞ Life-size.

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Magnificence fluttering above an insect-laden leaf, his cup of joy is full. But the bird is no recluse, and numbers of them join that bright array which consecrates our tree-tops year by year.

The song of the magnolia, though not often heard, is clear and musical and fairly distinctive.

The nests, hidden in evergreens, from four to forty feet above the ground, are built of stiff stems, lined with fine stems and a little grass. Four or five eggs are laid in May or June. They are pale bluish-white, spotted and blotched with different shades of red and brown.

CERULEAN WARBLER

The Cerulean Warbler, commonly called the blue warbler, inhabits the United States west to Nebraska and Minnesota, breeding from the States bordering the Great Lakes northward through New England, Quebec, and Ontario, and wintering in the tropics. This little warbler probably haunts the highest timber of any that frequents deciduous growth. It may be considered a rare summer resident in northern Illinois and Indiana.

Audubon describes the song as extremely sweet and mellow. The favorite call note is a dainty lisp, " Tweet-tweet-tweet-twee-ee," ending with a trill or twanging effect on the ascending scale. These birds of the tree-tops are partial to elm and oak timber, usually at the edge of the forest. Like the chestnut-sided warblers, these little fellows have a smart bantam-like appearance, carrying the tail rather high and moving nervously from twig to twig.

The nests are beautifully constructed, and remind one of the abode of the blue-gray gnatcatcher. Externally they are made of grass and bark fibers, bound with spider silk and lichens; the inside of the nest is composed of fine stems and grass. These little nests are firmly attached to the drooping limb of a tree, from twenty-five to fifty feet above the ground. Four or five eggs are deposited.

CHESTNUT-SIDED WARBLER

The Chestnut-sided Warbler is one of the commonest of eastern North American warblers, occurring chiefly west of the Mississippi River, but in more southerly latitudes than most of our warblers, excepting the yellow and the black and white. The song of the chestnut-sided warbler is suggestive of the yellow warbler, and the two frequent similar growths of brush and woodland, but in different localities. In central Ohio, northern New York, and the New England States, this bird summers in company with the prairie warbler. There are one or two nesting records for this bird in northern Illinois. It is an abundant summer resident in upper Minnesota, Wisconsin, and Michigan. I found a number of nests during the first week of June around Butternut Lake, Wisconsin. The birds seem partial to berry bushes and small maples at the edge of woodlands.

The nests are loosely constructed of grass and coarse stems, lined with finer material. The four or five eggs are laid about June 1st. They have a dull bluish-white background and are spotted with shades of brown, chiefly at the larger end.

CHESTNUT-SIDED WARBLER.
(Dendroica pensylvanica).
Life-size.

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BAY-BREASTED WARBLER.
(Dendroica castanea, Wils.)

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THE BAY-BREASTED WARBLER*

The Bay-breasted, which is also popularly called Autumnal, Warbler breeds from northern New England and northern Michigan northward, its nest being found in low, swampy woods, where there is a mixture of evergreens, oak, birch, elm, and other trees. It is compact, cup-shaped, and usually placed in coniferous trees, from five to fifteen or even twenty feet above the ground. Fine shreds of bark, small twigs, fibrous roots, and pine hair are used in its construction. Four eggs are laid, which are white, with a bluish tinge, finely speckled on or around the larger end with reddish-brown.

Comparatively little is known of the habits of this species. It passes in spring and fall, on its way to the North, being sometimes abundant at both seasons, but does not tarry long. In general habits, at all times, it closely resembles other species of the genus. In Oxford County, Maine, says Mr. Maynard, these birds are found in all the wooded sections of that region, where they frequent the tops of tall trees. The species seems to be confined during the building season to the region just north of the White Mountain range.

Ridgeway says: "Tanagers are splendid; hummingbirds are refulgent; other kinds are brilliant, gaudy, or magnificent; but warblers alone are pretty in the proper and full sense of that term. When the apple trees bloom, the warblers revel among the flowers, vying in activity and in number with the bees; now probing the recesses of a

blossom for an insect which has effected lodgment there, then darting to another, where, poised daintily upon a slender twig, or suspended from it, he explores hastily but carefully for another morsel."

THE BLACK-POLL WARBLER*

Few birds have a wider and more extended range than the Black-poll Warbler. Wintering in the southern United States, Central America, and the northern part of South America, they move northward in the spring, reaching Greenland and Alaska in June. Their range extends to the westward as far as the Rocky Mountains. Their breeding range is nearly confined to the regions north of the United States.

The nest is interesting. It is usually placed on a large branch at its junction with the trunk of the tree. A cone-bearing tree is selected, and the spruce is preferred, as in it the nest is more perfectly obscured. The Black-poll's house is not the delicate structure that one would expect to find as the home of so dainty a bird. This bulky structure is usually placed not higher than six or eight feet from the ground. It is constructed from the fine twigs and sprays of the evergreen trees and fine roots woven with weeds, moss, lichens, and vegetable and animal hairs. The lining consists of fine grass and feathers. Though the external diameter of the nest is fully five inches, the internal diameter seldom measures over two inches.

Mr. Langille has beautifully described the song of the Black-poll. He says: "That song, though one of the most

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BLACK-POLL WARBLER.
(Dendroica striata.)
Life-size.

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91

BLACKBURNIAN WARBLER.
(Dendroica blackburniae).
Life-size.

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slender and wiry in all our forests, is as distinguishable as the hum of the cicada or the shrilling of the katydid. Tree-tree-tree-tree-tree-tree-tree-tree, rapidly uttered, the monotonous notes of equal length, beginning very softly, gradually increasing to the middle of the strain, and then as gradually diminishing, thus forming a fine musical swell—may convey a fair idea of the song. There is a peculiar soft and tinkling sweetness in this melody, suggestive of the quiet mysteries of the forest."

THE BLACKBURNIAN WARBLER*

Other common names of this beautiful warbler are Orange-throated Warbler and Hemlock Warbler.

The orange-throat is only migratory in Illinois, passing through in spring and fall, its summer home being chiefly, if not wholly, to the northward, while it passes the winter in Central America and northern South America. It is found in New York and in portions of Massachusetts, frequenting the coniferous forests and building its nest in bushes or small trees, a few feet above the ground. From all accounts, the nests of this species are elegantly and compactly made, consisting of a densely woven mass of spruce twigs, soft vegetable down, rootlets, and fine shreds of bark. The lining is often intermixed with horse hairs and feathers. Four eggs of greenish-white or very pale bluish-green, speckled or spotted, have usually been found in the nests.

The autumnal male warblers resemble the female. They have two white bands instead of one; the black stripes on the sides are larger; under parts yellowish; the throat yel-

lowish, passing into purer yellow behind. Few of our birds are more beautiful than the full-plumaged male of this lovely bird, whose glowing orange throat renders it a conspicuous object among the budding and blossoming branches of the hemlocks.

Mr. Minot describes the Blackburnian Warbler's summer song as resembling the syllables wee-see-wee-see, while in the spring its notes may be likened to wee-see-wee-see, tsee, tsee, tsee, repeated, the latter syllables being on ascending scale, the very last shrill and fine.

THE BLACK-THROATED GREEN WARBLER*

Not the least among the birds that assist man in his warfare upon insect pests are our beautiful and active warblers that frequent the foliage of trees and shrubs, patiently gathering their insect food.

One of these is the Black-throated Green Warbler of our illustration. If we desire to examine its habits, except during the period of migration, we must visit the forests of cone-bearing trees in the Northern woods of the eastern United States, in the Alleghany Mountains, and from these points northward to Hudson Bay. It is almost useless to seek this bird in other places. Here, high up in the cedars, pines, and hemlocks, in cozy retreats far out on the branches, it builds its nest. "The foundation of the structure is of fine shreds of bark, fine dry twigs of the hemlock, bits of fine grass, weeds, and dried rootlets, intermixed with moss and lined with rootlets, fine grass, some feathers and horse hair." The nests are usually bulky and loosely constructed.

BLACK-THROATED GREEN WARBLER.
(Dendroica virens).
Life-size.

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TOWNSEND'S WARBLER.
(Dendroica townsendi).
About Life size.

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These rollicking warblers have a peculiar song which is very characteristic and not easily forgotten. The descriptions of this song are almost as numerous as are the observers. One has given this rendering: "Hear me, Saint Ther-e-sa." Another has verp aptly described it as sounding like "Wee-wee-su-see," the syllables "uttered slowly and well drawn out; that before the last in a lower tone than the two former, and the last syllable noticeably on the upward slide; the whole being a sort of insect tone, altogether peculiar, and by no means unpleasing."

The song of the black-throated green warbler is so unlike that of the other warblers that it becomes an important characteristic of the species. Mr. Chapman says: "There is a quality about it like the droning of bees; it seems to voice the restfulness of a mid-summer day."

THE TOWNSEND'S WARBLER*

The American warblers include more than one hundred species, grouped in about twenty genera. Of these species, nearly three-fourths are represented in North America, at least as summer visitants, the remaining species frequenting only the tropics. Though woodland birds, they exhibit many and widely separated modes of life, some of the species preferring only aquatic regions, while others seek drier soils. Some make their homes in shrubby places, while others are seldom found except in forests. As their food is practically confined to insects, they frequent our lawns and orchards during their migrations, when they fly in companies which may include several species. Mr. Chapman, in his

"Handbook of Birds of Eastern North America," says: "Some species flit actively from branch to branch, taking their prey from the more exposed parts of the twigs and leaves; others are gleaners, and carefully explore the under surfaces of leaves or crevices in the bark; while several, like flycatchers, capture a large part of their food on the wing."

The Townsend's Warbler is a native of western North America, especially near the Pacific Coast. Its range extends from Sitka on the north to Central America on the south, where it appears during the winter. In its migration it wanders as far east as Colorado. It breeds from the southern border of the United States northward, nesting in regions of cone-bearing trees. It is said that the nest of this warbler is usually placed at a considerable height, though at times as low as from five to fifteen feet from the ground. The nest is built of strips of fibrous bark, twigs, long grasses, and wool, compactly woven together. This is lined with hair, vegetable down, and feathers.

The eggs are described as buffy-white, speckled and spotted with reddish-brown and lilac-gray, about three-fifths of an inch in length by about one-half of an inch in diameter.

THE PALM WARBLER*

There are two varieties of this species—the Palm or Red-poll Warbler, and the Yellow Palm or Yellow Red-poll Warbler. The latter is a native of the Atlantic States and breeds from Maine northward to Hudson Bay. The former frequents the interior of the United States and

PALM WARBLER.
(Dendroica palmarum).
Life-size.

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migrates northward as far as the Great Slave Lake. It is seldom seen in the Atlantic States except during its migrations.

Both varieties winter in the Southern States that border on the Atlantic Ocean and the Gulf of Mexico, in Mexico, and in the islands of the West Indies. While both birds are often seen in the same flock during the winter the palm warbler is much more common in Florida than is the Eastern cousin. When together, the two forms may be readily distinguished by the brighter yellow of the yellow palm warbler. Three of the large family of wood warblers may be called the vagabonds of the family, for they do not love the forest. These are the palm, the yellow palm, and the prairie warblers.

Wherever it is, it frequently utters its low "tsip," a note that is very similar to that of many of its sister warblers.

Dr. Brewer says: "They have no other song than a few simple and feeble notes, so thin and weak that they might almost be mistaken for the sound made by the common grasshopper."

The palm warbler's nest is a trim structure, usually placed upon the ground, and never far above it. The walls consist of interwoven dry grasses, stems of the smaller herbaceous plants, bark fibers, and various mosses. It is lined with very fine grasses, vegetable down, and feathers. Though this home is placed in quite open places, a retired spot is usually selected. Here are laid the white or buffy-white eggs, more or less distinctly marked with a brownish color, and a family of four or five of these peculiar warblers is raised.

THE PRAIRIE WARBLER*

This beautiful little warbler cannot fail to awaken an interest in bird life in the mind of any person whose privilege it is to observe it in its chosen haunts. These are the shrubby pasture lands and the open woods of the eastern United States. It is more common in barren, sandy places of the Atlantic Coast, where it seems to find an insect food suited to its taste. It not infrequently visits orchards when in bloom, especially those in retired localities.

"It has a curious song, if song it can be called, as much like a mouse complaining of the toothache as anything else I can liken it to—it is simply indescribable."

The flight of the Prairie Warbler is neither strong nor protracted. Yet it is one of the most expert flycatchers among the warblers. It is not a social bird, and it is very seldom that more than two or three are seen together.

The prairie warbler is prettily colored. The back is marked with reddish-brown spots on an olive-green ground. Beneath the eye of the male there is a streak of black which is absent in the female. The throat and under parts are a rich yellow color, with small spots of black on the sides of the neck. The female is duller in color.

The nest is nearly always placed in the fork of a branch of a tree or shrub, and never far from the ground. A wild rose bush is sometimes selected. Mr. Welch describes one that he found in such a place. It was mainly constructed of "the soft inner bark of small shrubs mingled with dry rose leaves, bits of wood, woody fibers, decayed stems of

PRAIRIE WARBLER.
(Dendroica discolor.)
About Life-size.

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OVEN-BIRD.
$\frac{1}{2}$ Life size.

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plants, spiders' webs, etc." These were elaborately woven together and bound by "cotton-like fibers of a vegetable origin." The nest had a lining of fine fibers and horse hair. He also calls attention to the upper rim of the nest, it "being a strongly interlaced weaving of vegetable roots and strips of bark."

OVEN BIRD

The Oven Bird, or Golden-crowned Thrush, ranges throughout eastern North America, breeding from Kansas and Virginia north to Manitoba and Labrador, south along mountains to South Carolina, and wintering from Florida south.

The general outline of the oven bird is suggestive of the thrush family. Their name arises from their remarkable nest, which is placed on the ground among the leaves, ferns, or fallen logs, with the entrance on the side. The nest is covered externally with dead leaves interwoven with grass, and the lining is of fine round stems. Like the house of the ouzel, wren, and magpie, it is large for the size of the bird.

The oven bird is a common transient throughout Illinois, Indiana, and Ohio, a few remaining to breed, while in Wisconsin and Michigan they are common summer residents.

Some authors describe the song of the male by saying it resembles the word "teacher" rapidly repeated eight or ten times in succession, with greater emphasis on the last few notes. To the writer it always seems as if the little songster were trying to attract attention to himself by continually calling, "Me-sir, Me-sir, Me-sir."

The four to six eggs are white, profusely covered with

spots of dark red. While walking over fallen logs, watching a beautiful male Blackburnian warbler, I noticed a bird running through the leaves and moss with drooping wings, as if greatly distressed. Its small size and striking appearance at once disclosed the identity of the bird, and I carefully dropped to my knees and searched every square foot of ground until I discovered a little opening through which was displayed the handsomely spotted eggs of the oven bird. Had the parent remained upon her treasures, her presence would never have been suspected.

THE WATER-THRUSH*

The Water-thrush has so many popular names that it will be recognized by most observers by one or more of them. It is called small-billed water-thrush, water wagtail, water kick-up, Besoy kick-up, and river pink (Jamaica), aquatic accentor, and New York aquatic thrush. It is found chiefly east of the Mississippi River, north to the Arctic Coast, breeding from the north border of the United States northward. It winters in more southern United States, all of middle America, northern South America, and all of West Indies. It is accidental in Greenland. In Illinois this species is known as a migrant, passing slowly through in spring and fall, though in the extreme southern portion a few pass the winter, especially if the season be mild. It frequents swampy woods and open, wet places, nesting on the ground or in the roots of overturned trees at the borders of swamps. Mr. M. K. Barnum, of Syracuse, New York, found a nest of this species in the roots of a

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GRINNELL'S WATER THRUSH.
Life size.

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LOUISIANA WATER-THRUSH.
(Seiurus motacilla).
Life-size.

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tree at the edge of a swamp on the 30th of May. It was well concealed by the overhanging roots, and the cavity was nearly filled with moss, leaves, and fine rootlets. The nest at this date contained three young and one egg. Two sets were taken, one near Listowel, Ontario, from a nest under a stump in a swamp, on June 7; the other from New Canada, Nova Scotia, July 30. The nest was built in moss on the side of a fallen tree. The eggs are creamy-white, speckled and spotted, most heavily at the larger ends, with hazel and lilac and cinnamon-rufous.

As a singer this little wagtail is not easily matched, though, as it is shy and careful to keep as far from danger as possible, the opportunity to hear it sing is not often afforded one. Though it makes its home near the water, it is sometimes seen at a distance from it. C. C. Marble.

LOUISIANA WATER-THRUSH

The range of the Louisiana Water-thrush is eastern United States north to the Great Lakes, wintering in the tropics.

" Amidst our more modest surroundings the Louisiana water-thrush occupies much the same position relatively that the water ouzel does in the mountainous regions of the West. Both birds possess themselves of the wildest environments to be had, and both are the animating spirits of their chosen haunts. Although no one suspects any structural affinities between the two, a half dozen other close points of resemblance might be noted, as poetic temperament and talent in song.

"Only the most picturesque and unfrequented glens are tenanted by this poet-bird from the South. Where cool waters trickle down from mossy ledges and pause in shallow pools to mirror the foliage of many trees will you find the water-thrush at home. Following an imperious chink of question and alarm, he will pause at the water's edge impatiently, as though awaiting your withdrawal. The bird stands with the body horizontal or with the hinder parts elevated, jetting the tail vertically from time to time without moving the head. If you pretend to withdraw, the bird will wade about in the shallow water or search noisily among the dead leaves, uttering an energetic chink, or he tries hiding and disappears mysteriously behind a bunch of ferns. Three minutes elapse, when the shrewd observer concludes there must be a nest, and he moves forward, but the bird flies down the glen, and no nest is found.

"Wherever the nest, the bird regards himself as trustee of the whole glen, and his watchful fidelity is impartially bestowed upon all parts of it, as every half hour or so the male bird ranges its length. Now he dashes like a swallow across some open glade; now he pauses on a log or stone, alternately moving and inspecting until his voice is lost in the distance." (Adapted from Dawson's "Birds of Ohio.")

THE KENTUCKY WARBLER*

The Kentucky Warbler is recognized as one of the most beautiful of the warbler family. It is altogether a conspicuous bird, both on account of its brilliant plumage and great activity, the males being, during the season of nesting,

KENTUCKY WARBLER.
Life-size.

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MOURNING WARBLER.
(Geothlypis philadelphia).
Life-size.

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very pugnacious, continually chasing one another about the woods. It lives near the ground, making its artfully concealed nest among the low herbage, and feeding in the undergrowth, the male singing from some old log or low bush, his song recalling that of the cardinal, though much weaker. The ordinary note is a soft "schip," somewhat like the common call of the pewee. Considering its great abundance, says an observer, the nest of this charmer is very difficult to find; the female, he thought, must slyly leave the nest at the approach of an intruder, running beneath the herbage until a considerable distance from the nest, when, joined by her mate, the pair by their evident anxiety mislead the stranger as to its location.

The warblers are migratory birds, the majority of them passing rapidly across the United States in spring on the way to their Northern nesting grounds, and in autumn to their winter residence within the tropics.

MOURNING WARBLER

The Mourning Warblers inhabit the eastern portions of the United States, but are comparatively rare west of the Mississippi, except perhaps in Montana. They breed from Nebraska and the New England States northward to New Brunswick and Hudson Bay.

The bird bears a general resemblance to the Connecticut warbler, a rare species; the latter, however, possesses a white line about the eye which is always lacking in the plumage of the mourning warbler. This warbler feeds, travels, and breeds in low elevations, being partial to

growths of long grass and weeds in low, damp woods or roadsides. The simple, clear song has been described as follows: "True-true-true-tu-too," uttered on the ascending scale except the last two syllables, which convey the effect of two low whistles. When feeding or otherwise engaged, the birds seem to omit the first three notes, uttering simply the lower tones. Like the little short-billed marsh wren, they are fond of perching on a dead stump and singing persistently for many minutes at a time.

The nests are of fine grass and stems, usually placed in a dense clump of grass or between the stalks of some weed or plant growing in damp ground. The background of the four eggs is light creamy and the eggs are handsomely blotched around the larger end with rich brown and lilac.

THE MARYLAND YELLOW-THROAT

One of the first birds with which we became acquainted was the Maryland Yellow-throat, not especially because of its beauty, but on account of its song, which at once arrests attention. "Wichity, wichity, wichity, wichity," it announces from some thicket or bush where it makes its home. It is one of the most active of the warblers, and is found throughout the United States, Canada, and Nova Scotia; in winter it migrates to the South Atlantic and Gulf States and the West Indies.

The nest is not an easy one to find, being built on the ground, under the foot of a bush or tussock of rank grass, sometimes partly roofed over, like the oven bird's. The eggs are four or five, rarely six, in number, creamy-white,

MARYLAND YELLOW-THROAT.
4-5 Life size.

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WESTERN YELLOW-THROAT WARBLER.
Life-size.

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speckled, chiefly at the larger end, with reddish-brown, dark umber, and black; in some, occasional lines or scrawls appear. The average size is .69 by .52 inch. Oliver Davie says that the best description of this bird's song was given by Mr. Thomas M. Earl. One evening in May he was returning from a day's hunt, and, after a rest on an old log, he was about to start on his journey homeward. At this instant a little yellow-throat mounted a small bush and, in quick succession, said: "Tackle me! tackle me! tackle me!" The fact is, the yellow-throat has several notes and is rather noisy for so small a bird. It is known by other names, as black-masked ground warbler, black spectacled warbler, brier wren, and yellow brier wren.

The female is much duller in color than the male, without black, gray, or white on head. The young are somewhat like the adult female. C. C. M.

WESTERN YELLOW-THROAT

The Western Yellow-throat occurs from the Mississippi River to the Rocky Mountains, breeding north to Manitoba and wintering in Central America. In habits and general appearance he is very similar to the Maryland yellow-throat, which occurs in the Mississippi Valley, Great Lakes region, and eastern United States north of the Ohio River. From California to British Columbia, a sub-species known as the Pacific yellow-throat occurs; in southwestern United States, another form, called the Rio Grande yellow-throat, is found, and we have the Florida yellow-throat in the southeastern portion of the United States.

No bird sings with greater vim and vigor than the yellow-throat. It haunts the rank grass and low shrubbery in wet places. The male may be heard calling "whee-chee-chee," which is the writer's interpretation of the song. Some authors describe him as saying "wichity, wichity." These birds destroy great numbers of worms and moths and their larvæ, so are highly useful to the interests of man.

The nests are placed in thick clumps of grass, sometimes in a low bush, well concealed by rank vegetation. Three to five creamy-white eggs with dots and lines are laid.

YELLOW-BREASTED CHAT

This large warbler inhabits the eastern United States, west to Dakota, Kansas, and eastern Texas, north to southern Ontario and southern New England, being a common summer resident in various portions of the States bordering the Great Lakes. It winters in eastern Mexico and Central America to Costa Rica.

Thickets bordering roadsides, streams, and swampy places are the most likely spots in which to look for this bird, it being easier to find him by his notes than by his appearance.

Mr. Frank M. Chapman says: "No other warbler is possessed of the chat's individuality. Although the chat avoids rather than seeks observation, he by no means shuns the habitations of man, and, when favorable cover was offered, I have known these birds to nest in a village. Because of the nature of his haunts, he has the bird student at a complete disadvantage. When seemingly almost within

YELLOW-BREASTED CHAT.
1/3 Life size

reach, he is still invisible, and one might well imagine that he intentionally leads him through the most impenetrable part of his haunts merely to enjoy our futile efforts to see him. If, however, you would see the chat satisfactorily, fight him with his own fire. Seat yourself in a thicket and with pursed lips squeak gently but persistently. Soon there will be an answering 'chut,' and with due patience and discretion you may induce this elusive creature to appear.

"I do not recall a more suspicious bird than the chat. Even the crow's innate caution is sometimes forgotten, but a chat is always on guard. While the cowbird frequently deposits her eggs in the chat's nest, they are seldom hatched, but are destroyed by the owner of the nest, which owner is apt to peck a hole in all the eggs and desert the nest. On moonlight nights the chat often sings freely. The voice of the bird is flexible to an almost unlimited degree. It has no note suggesting its place among the warblers. The song is almost impossible to describe. It begins with two slow, deep notes; then follows one high-pitched and interrogative note; then several, rapid and even, and from that point on to the end I have never been able to give any rendering of the clucking and gurgling that completes the long song. His love song is a woodland idyl, and makes up for much of his shortcomings. From some elevated perch, from which he can survey the surrounding waste for a distance, he flings himself into the air; straight up he goes, on flapping wings, legs dangling, head raised, his whole being tense and spasmodic with ecstasy. As he rises he pours forth a volley of musical gurgles and whistles that drop from him in silvery cascades to the ground like fairy chimes."

In addition to the superior size of this warbler it may also be distinguished by its short, stout bill, suggestive of our flycatchers.

The nests are composed of long, light grass and stems, a light but bulky affair, placed in thickets at low elevations. The birds occur quite commonly along the Illinois River. Three or four eggs are laid, usually from the middle of May until the second week in June. The background is whitish and the markings reddish-brown, quite thickly distributed over the entire surface.

HOODED WARBLER

The range of the Hooded Warbler is the eastern United States, breeding as far north as northern Illinois and northern Pennsylvania, and wintering in Central America.

"Take a lump of molten gold fashioned like a bird, impress upon it a hood of steel, oxidized, as black as jet, overlay this in turn with a half-mask of the gold, tool out each shining scale and shaft and filament with exquisite care, and you may have the equal of one of those ten-thousand-dollar vases of encrusted steel and gold which the Spanish are so clever at making—an heirloom to be handed down from father to son. But let Nature breathe on it; let the Author of Life give it motion and song, and you will have a hooded warbler—not less beautiful that you cannot handle it, but infinitely more so in that its beauty takes a thousand forms, a fresh one for every turn of fancy that may stir an avian breast.

"To me the bird first came as a voice, a sweet and pure

HOODED WARBLER.
(Silvani mitrata).
Life-size

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FROM COL. CHI. ACAD. SCIENCES

CANADIAN WARBLER.
(Sylvania canadensis).
About Life-size.

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AMERICAN COLORTYPE CO., CHI. & N. Y.

but altogether puzzling sound, tossed down from a tree-top on a foggy morning, an hour before dawn.

"The hooded warbler shows a decided preference for damp woods where there is plenty of undergrowth. Beech woods are favorite places if the other conditions are suitable. Here the birds spend their time fly-catching along the middle levels, or descend to search the brush. The tail is sometimes carried half-open, after the redstart's well-known fashion; but otherwise the birds are much less fussy than their salmon-spotted neighbors.

"Like most warblers, the hooded has a chip note of alarm which is distinctive to practiced ears, while the male has a song which is quite marked, "tsu-e, tsu-e, tsu-e, tsu-wee-tsu." The notes are ringing and musical, but the last two contain a sort of vocal somersault, as though the bird were attacked by a sudden inclination to sneeze. These last notes would undoubtedly be mistaken for those of the Acadian flycatcher, if heard alone. This is the common song, but some variant forms occur." (Adapted from Dawson's "Birds of Ohio.")

The nests of bark strips, stems, dead leaves, and grasses are placed at low elevations in saplings or bushes. The four eggs are flesh-colored, daintily speckled with purple and brown.

THE CANADIAN WARBLER*

The attractive Canadian Warbler is not an uncommon migrant, yet because of its natural habits it is not readily observed, and is often considered of rare occurrence. Like many of the warblers, it is somewhat erratic in its migra-

tions, and may be very abundant one season and very rare the next. It frequents the edges of woodlands, and finds the greatest satisfaction in the forests that border streams and other bodies of water. It is quite partial to coniferous forests, and, wherever these are found within its range, it will be found more common in them than in adjacent hardwood thickets. It has an extensive range, which covers eastern North America, westward to the Plains, and from Lake Winnipeg and Newfoundland southward. As winter approaches, it passes through eastern Mexico to Central and South America, where its presence has been noted in Peru. It breeds in the Alleghanies and the more elevated regions of New England and New York, northward to the limits of its range, and westward to Manitoba. Its nests are also occasionally found in the northern portions of the middle United States.

Mr. Ernest E. Thompson describes its song as loud and rasping, and gives it the following syllabic rendering: "Rup-it-che, rup-it-che, rup-it-chitt-it-lit." It sings frequently during the spring, but becomes silent before the close of summer.

The nest of the Canadian warbler is built upon the ground in woods, in shrubby fields, or in shaded swampy places. Audubon alone describes it as being found elsewhere. He writes of finding a nest "in the fork of a small branch of laurel, not above four feet from the ground." The nest is usually placed beside a log or among roots, and is made of quite loosely arranged leaves, dried grasses and weed stalks, roots, and hair; it is lined with hair; contains four white eggs with chestnut spots around the large end.

AMERICAN REDSTART.
Life-size.

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REDSTART

The Redstart ranges from New York, Ohio, Indiana, and Illinois northward. With the yellow warbler, Maryland yellow-throat, yellow-breasted chat, and oven-bird, this handsome species represents the small detachment of warblers that spend the summer around the southern borders of the Great Lakes region, especially west of Ohio. The redstart is partial to damp woodlands and shady roadsides. The males flit hurriedly from branch to branch, alternately spreading their tails and dropping the wings. Each move is the personification of nervous energy.

The males have beautiful patches of salmon-pink in both the tail and wing feathers. The sides of the body are also tinted with this beautiful shade. The style and color effect are suggestive of the markings in our towhee, but the redstart is much smaller. The plumage of the female redstart is much less conspicuous than that of her mate. The beautiful salmon shade seen in the plumage of the male is replaced by light yellow. Her upper parts are pale brown instead of black.

Decidedly a fly-catching warbler, feeding usually at low elevations, capturing insects on the wing, and hunting for their larvæ in the crevices of the bark and under the leaves and stems, mark this beautiful bird as one of our very useful friends.

The song is a hurried little twitter, uttered with a rising inflection of the voice. The nests are placed within ten or twelve feet of the ground, and are composed of Indian

hemp, fine stems, bark fibers, and cobwebs, lined internally with fine round stems. Three or four white eggs, delicately spotted at the larger end with light reddish-brown, are laid from the middle of May to the middle of June. In spite of the small size of the nest, the cowbird frequently deposits one or two eggs in it.

FROM COL. CHI. ACAD. SCIENCES.

AMERICAN DIPPER OR WATER OUZEL.
(Cinclus mexicanus).
Life-size.

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CHAPTER XIX

THRASHERS, WRENS, ETC.

Mocking-birds, Catbirds, and Thrashers are all described under the one sub-family, *Mininæ*. This group is distinctively American, about a dozen species reaching the United States. They are adepts at mimicry and are clever songsters, ranking first in execution. Their food consists of both animal and vegetable life. Thrashers and mocking-birds appear equally fond of grasshoppers and other insects and small fruits. Many birds of this family show a decided preference for the haunts of man, and are familiar in shrubby growths of populated districts. Most are decidedly warm-weather birds.

Wrens, sub-family *Troglodytinæ*, are mostly American, and are most abundant in the tropics. These nervous, active birds inhabit thickets, where they creep into all kinds of nooks and corners for their food, which consists of worms and insects and their larvæ. Most species are highly musical.

DIPPER

Mountainous portions of western North America, from the northern portions of Central America northward to Alaska, are frequented by the Dipper, or Water Ouzel. While these bluish-gray birds are considered to be closely related to the thrushes, they show little family resemblance,

except that they are exceptionally sweet songsters. Aquatic as the mud hen, they run nimbly over the rocks and stones after the manner of our little spotted sandpiper, tilting backward and forward. In some ways their habits are suggestive of our water thrushes, as these nervous birds are constantly on the move. They are never found about stagnant water, but frequent the mountain torrents where the water dashes over the rocks. Here they seek small forms of animal life among the crevices.

One naturalist describes the bird as follows: "They are the embodiment of a mountain torrent — bustling and energetic; and their song is like crystallized spray — sweet, sparkling, and vivacious, taken with its surroundings. I do not know of any other bird's song which surpasses it."

The beautiful nests are placed on a little ledge or shelf, usually close to the water's edge, where they are frequently kept damp by the spray. Sometimes the roots of an upturned tree afford a suitable site. The nest is a beautiful ball of green moss, dome-shaped, with a small entrance at the side. It is strongly arched over with leaves and grasses and supported by twigs, the entire mass being firmly cemented with mud. It is hardly possible to secure one of these nests for museum purposes because of their peculiar composition and the firmness with which they are attached to other articles.

Four or five pure white eggs are laid. The latter half of May and the first two weeks of June are the breeding dates. The eggs bear a general resemblance to those of the purple martin. I have a set of four sent me from the mountains of Colorado.

MOCKINGBIRD.
(Mimus polyglottos).
$\frac{3}{5}$Life-size.

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MOCKING-BIRD

The Mocking-bird is a member of the thrasher family and, like the cardinal, is gradually pushing his way northward and infringing upon the domains of the brown thrasher, often called our Northern mocking-bird. While the mocking-bird is found chiefly south of the Ohio River, it is also found as far north as Iowa and central Illinois. The Rocky Mountain form is considered a sub-species, called the Western mocking-bird.

Mocking-birds feed chiefly on worms, beetles, small berries, and fruit, so is a useful bird economically. By many sentimental writers rather than genuine naturalists, these birds are considered the finest of American songsters; but, while they have a great range and quality of tone, our foremost authorities have not considered them in the same class with the wood and hermit thrushes, the bobolink, and the cardinal. Some admirers claim it should be made the National Song-bird.

Neltje Blanchan writes: "With all his virtues, it must be added that this charming bird is a sad tease. There is no sound, whether made by bird or beast, about him, that he cannot imitate so cleverly as to deceive every one but himself. Very rarely can you find a mocking-bird without intelligence and mischief enough to appreciate his ventriloquism — slim, neat, graceful, and amusing, with a rich, tender song, and with an instinctive preference for the society of man."

Before the enforcement of the American Song-bird

Law, which prohibits the catching and keeping in confinement any of our native song birds, except by duly authorized parks and museums, this bird was a favorite pet. The young are easily reared by hand, and many people prefer them to the canary. Mocking-birds are most at home near the habitations of man, and are especially fond of perching on chimneys.

The nests are usually placed at low elevations, and are bulky structures of grass, sod, and twigs, lined with dark roots, horse hair, and cotton. Like the catbird and the brown thrasher, they enjoy placing their nests in the most impenetrable thickets. Four or five eggs are laid in May. The background varies in different specimens. Some are greenish-blue and others tan. The markings are in the form of spots, varying in shade from rich chestnut to pale brown.

CATBIRD

The Catbird ranges throughout temperate North America, breeding from the Gulf to New Brunswick and British Columbia, and wintering in Florida and southward.

The catbird ranks high as a housekeeper, taking great pains in protecting her nest from the sun. Her plumage is a uniform slaty-gray or a mouse color, with a few reddish-brown feathers on the under tail coverts; otherwise she possesses no suggestion of brown or rufous, so prominent in the brown thrasher, a near relative.

The catbird shuns exposed situations. Though not a timid bird, often inhabiting the undergrowth in public parks or along pathways, both male and female are cau-

CATBIRD.
⅞ Life-size.

tious in their movements, seldom exposing themselves except when flying from one cover to another. The brown thrasher gives vent to his feelings by singing from exposed perches; but the catbird, like the chat, talks and sings in hidden places. Their alarm note, like their call note, sounds like the mew of a cat, hence the name "catbird." The song proper is much like that of the brown thrasher. Catbirds feed upon worms and winged insects, which they find in the dense foliage, also upon berries and small fruit. Partial to warm weather, they do not arrive until the foliage in April is sufficiently developed to offer proper concealment.

"Reports from the Mississippi Valley indicate that the catbird is sometimes a serious annoyance to fruit growers. The reason for such reports may possibly be found in the fact that on the prairies fruit-bearing shrubs, which afford so large a part of this bird's food, are absent. With the settlement of this region comes an extensive planting of orchards, vineyards, and small fruit gardens, which furnish shelter and nesting sites for the catbird, as well as for other species. There is, in consequence, a large increase in the numbers of the birds, but no corresponding gain in the supply of native fruits upon which they were accustomed to feed. Under these circumstances, what is more natural than for the birds to turn to cultivated fruits for their food? The remedy is obvious: Cultivated fruits may be protected by planting wild species, which are preferred. Some experiments with catbirds show that the Russian mulberry is preferred to any cultivated fruit. Although the catbird sometimes does considerable harm by destroying small fruit, the bird cannot be considered injurious. On the con-

trary, in most parts of the country it does far more good than harm." (Farmers' Bulletin No. 54.)

The birds are abundant in eastern North America, where they frequently nest in the same shrub with the yellow warbler. The nests are quite bulky, being made of stems, leaves, and hay, lined internally with dark rootlets. The nests may be found in low situations, usually not to exceed seven to eight feet above the ground. The four or five eggs are laid in May, and a second brood hatches in July. The birds call vigorously when their nests are disturbed.

BROWN THRASHER

The Brown Thrasher ranges through eastern North America, breeding from the Gulf to Manitoba and Maine, and wintering from Kentucky southward. This is the only bird bearing the name thrasher which occurs in eastern North America. From western Texas across to the Pacific several other thrashers occur. Arizona is the principal region for thrashers. There, among the cacti and shrubbery, one may find Leconte's, Palmer's, Bendire's, curve-billed, and Cressal's thrashers.

The brown thrasher, commonly called brown thrush, is not a thrush, but belongs to the same family as the mocking-bird and catbird. It is often properly called the Northern mocking-bird and in the South is often known as the sandy mocker. It is a long, slender bird with long tail, short wings, and curved bill. The upper parts are light brown; the throat and breast are thickly spotted and streaked with black. Less timid than the catbird, while he

BROWN THRASHER.
(Harporhynchus rufus).
About Life-size

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enjoys thickets, he unhesitatingly exposes himself, especially to sing.

"He is a finished musician, and, although his repertoire is limited to one air, he rivals the mocking-bird in the richness of his tones and execution." (Chapman.)

The brown thrashers seem to be increasing in numbers, and take more to the hedges in the fields. Some farmers complain of their crow-like fondness for corn; however, their fare of insects in the main makes them one of the farmer's best friends, though they do take toll of fruit.

Just at sundown I find myself among the hazel brush examining the tracks of some wary woodcock. Suddenly the air is filled with a series of trills, chirps, and warbles; now he whistles, now he sings, and presently he appears greatly agitated. This five-minute vaudeville announces the return of a most welcome resident. The brown thrasher hops about on the ground, taking great care in holding his long tail aloft and looking at all trespassers curiously through his lemon-colored eyes. A week or two later I find myself in the same place, when I see through the brush, among the leaves covering the soft mellow earth, what I first thought to be a setting woodcock. It is none other than Madam Thrasher, who has constructed a nest of stems and grass containing four light blue eggs densely covered with minute specks of brown. The lining of the nest is of rootlets, and so differs from the nest of the woodcock. Some nests are placed in brush piles, others in thorn-apple trees, easily within reach of the ground. The first nest is constructed late in April and the birds rear a second brood in June.

THE CALIFORNIA THRASHER*

One of the finest songsters among birds is the California Thrasher. Though confined to the coast regions of California, it is quite abundant and seems to bear to that locality the same relation that the brown thrush, or thrasher, does to the thickets further east. The song of this western thrasher is exquisitely sweet, and by some it is considered far superior to that of any of the numerous songsters that frequent the woods and brush of the Pacific Coast.

It is in the morning and in the evening that this thrasher pours forth its song from some prominent and exposed perch. Then, as it were, with all care dismissed from its mind, all the energy of its being is thrown into a hymn of nature. By some this song is considered richer than that of the mocking-birds, though the thrasher has but one air.

Because of its short wings, the movements of this thrasher are rather heavy. Its flights are short, and usually from bush to bush, while constantly opening and shutting its tail. Its life is not confined to trees and shrubs, for it moves easily on the ground, hopping rapidly, with accompanying jerks of its tail. It is said that it will scratch in the layer of old leaves under trees like a domestic fowl when hunting for its food. It prefers insect food, and seldom eats fruit of any kind, except when food of its choice is scarce.

Its favorite haunts seem to be the regions of scrubby oak and greasewood brush of the deep mountain gorges. Here it builds its home, which "is a coarse, widely con-

CALIFORNIAN THRASHER.
$\frac{2}{3}$ Life-size.

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CAROLINA WREN.
(Thryothorus ludovicianus.)
About Life-size.

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structed platform of sticks, coarse grass, and mosses, with but a very slight depression. Occasionally, however, nests of this bird are more carefully and elaborately made. It is always well hid in the low scrub bushes."

Both the sexes assist in the care of the eggs, though the male, as befits the father of a family, usually stands guard over the nest, giving a quiet note of warning on the approach of danger.

CAROLINA WREN

The Carolina Wren is found about the Great Lakes region in limited numbers. Their true summer home is south of the central portions of Illinois and Indiana and south of Iowa to the Gulf and east to the Atlantic. In southern Illinois and Indiana they are abundant. They are resident except in the northern limit of their range. This largest eastern wren nests about dwellings, sheds, brush, fence corners, and fallen logs. They remain paired throughout the year and are endowed with happy dispositions, singing almost constantly from early February until early fall.

They are musical and sing wherever found. Of their several songs, the common call or alarm note may be described thus: "Kurs——t," "Whe-o-wow-whe-o-wow-whe-o-wow," or "Ju-piter, Ju-piter, Ju-piter, Ju-piter," may give some idea of the elements of its best-known song. In tone and quality the notes remind one of the song of the Maryland yellow-throat. His loudest notes suggest the whistling of the cardinal.

The food of this useful bird consists chiefly of insects and spiders. They hop about old logs, stumps, and debris, intent on their pursuit of food. Mr. E. R. Quick, a resident of Indiana, describes a pair of Carolina wrens that frequented his premises a few winters ago and became very tame. In January he was splitting some honey locust logs, and the wrens, which sat within three feet of him, would hop down among the sticks when they were split and pick out the larvæ.

Mr. E. R. Ford, of Chicago, discovered a pair breeding in Cook County, Illinois. The nest was placed in the hollow of a tree, near the ground. The birds usually carry a quantity of grass, straw, moss, and leaves into a cavity, and late in April or during early May four to six white eggs are laid, spotted about the larger end with pale red and brown.

BEWICK'S WREN

This bird is frequently described as the long-tailed house wren. It is slightly smaller than the Carolina wren and larger than our common house wren. There are many subspecies, but the true Bewick's Wren inhabits eastern North America from Texas and Georgia rarely as far north as the Great Lakes region. Along the Atlantic Coast it is of only casual occurrence. It winters in the Gulf States. Like the house wren, it exhibits a preference for populated sections, frequently spending the summer about a large residence, nesting in the vines, wood pile, or places that would appeal to the little house wren. The range is extending farther north.

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BEWICK'S WREN.
(Thryothorus bewickii).
Life-size

HOUSE WREN.
About Life-size.

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Mr. John Wright, of Bartholomew County, Indiana, observed a pair that nested on an old mantel in a deserted house for three consecutive years. The first two years they built in a tin can, but the third year the tin can was missing, so they built right on the mantel. Mr. E. R. Quick, another Indiana observer, records a pair that reared a number of broods in a gourd. Once the same pair of birds, after hatching the first brood, brought forth a second brood from a nest in a ball of twine lying in a binder.

Their song is finer in tone than that of the Carolina wren. The alarm note is a distinct little "plit." Among our finest singers, they possess several songs, loud and penetrating.

The birds are great insect destroyers, and they are doubly beneficial because of the number of young reared in a season. Bewick's wren is on the increase, doubtless because it is able to withstand the saucy English sparrow.

The nests are made of the usual wren material, which is an accumulation of twigs, grass, and feathers. The eggs are white, minutely speckled with brown.

HOUSE WREN

The House Wren ranges throughout eastern North America, breeding to Manitoba and Ontario and wintering in the Gulf States.

This is little "Jenny Wren" whose tail sticks up like a "sore thumb." Some authors have considered western Indiana as the western limits of our common house wren, thereby classifying the species which occurs about Chicago

as the western house wren. From observations which I have made in the Great Lakes region, I am of the opinion that the distinction is not perceptible until we go west of the Mississippi. In the territory between the Mississippi and the Rocky Mountains the birds have a somewhat different song and their plumage is slightly lighter. On the Pacific Coast a still lighter form exists, known as Parkman's wren. The wrens partake of the habits of both the thrashers and creepers. The house wren frequents barns and gardens, and particularly old orchards. The food consists almost exclusively of insects, including grasshoppers, beetles, caterpillars, and bugs. These little birds often select unusual nesting sites, such as an old coat in the barn, brush heaps, tin cans, hitching-posts, abandoned woodpecker excavations, and bird-houses constructed for the purpose. The nests are remarkably large for the size of the bird, and I have never seen one that could be removed intact without disturbing the surroundings. Children should be encouraged to put up nesting boxes for these useful birds. A tin can with a hole too small to accommodate a sparrow, and no stoop in front, is sufficient.

The male sings at half-hour intervals throughout the day, from the time he arrives in the Middle States, late in April, until well along into July. Old stump fences which are used in some farming sections afford inviting breeding sites. Numbers of wrens may be found breeding about fields which are enclosed with this crude sort of fence.

I have seen the little fellows carry twigs eight inches long endwise into holes not exceeding an inch in diameter. One or two nests I have seen closely embedded in a thick

WINTER WREN.
(Troglodytes hiemalis.)
About Life-size.

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cluster of vines. The nests are lined with feathers, hair, and grass. From six to nine eggs are laid and two broods are reared in a season.

WINTER WREN

A trifle smaller than our house wren, the little Winter Wren is found in Illinois, Indiana, and Ohio only during the late spring and early fall. It is not a conspicuous bird while migrating, because it spends all the time about fallen logs, old stumps, and brush piles. It often does not fly until one is almost upon it. The only note as a migrant is a decisive little chatter, but it sings sweetly in its summer home. The winter wren summers from the northern borders of Maine, New Hampshire, Vermont, and possibly Michigan and Wisconsin, northward; it winters from New Jersey and southern Illinois southward.

This wren's song is described as "full of trills, runs, and grace notes, a tinkling, rippling roundelay." It reminds one of the song of the ruby-crowned kinglet.

Like the water thrush and dipper, nothing is more inviting than the roots of an upturned tree. Sometimes the crevices of unoccupied buildings or wood piles are used to shelter the nest, which is composed of small twigs, moss, and leaves, compactly interwoven and warmly lined with the feathers of various wild birds. The birds will desert the nest if it is touched by human hands.

The four to six white eggs, laid during the latter part of May or early June, are minutely and sparsely speckled with purple and lavender, chiefly at the larger end.

SHORT-BILLED MARSH WREN

The Short-billed Marsh Wren ranges throughout eastern North America, breeding from Manitoba to Massachusetts and south and wintering in the Gulf States and Mexico.

In June, when the waters of the marshes and sloughs have evaporated, the grass often becomes four or five feet high where the little "short-billed" forages. In general appearance he reminds us of his neighbor, the long-billed marsh wren, but is darker in plumage and may be identified by his song, which is entirely different, although expressing the genuine wren gurgle. The wrens sing as if they had some liquid in their throats and were attempting to gargle. Rushes and cattails have no particular attraction for the short-billed wren. He may choose a small scrub willow as a suitable place to pour forth his notes to the female, skulking in the grass. Like all other wrens, the short-billed is a useful bird economically because of insects destroyed.

In summer, when mosquitoes are aggravating, the bird-lover does not travel these tangles with the same enthusiasm as in April and June, when the pests are fewer and progress more easy. Still, we long to know more about the home life of the short-billed wren, and the song of the male assures us that we will be rewarded if persistent in our efforts. Perhaps it has not rained for many days and the grass is dusty from pollen and plant down. I drop to my knees and move slowly through the grass, looking carefully in all directions before advancing. Eventually a little bird

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SHORT-BILLED MARSH WREN.
(Cistothorus stellaris.)
Life-size

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LONG-BILLED MARSH WREN.
(Cistothorus palustris.)
Life-size.

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flies slowly from the cover ahead and takes refuge behind a little willow. Moving in that direction, I discover a round ball, composed of long grass or hay, neatly woven to the green stems, with a little opening on the side. Carefully inserting my finger, I find the interior incomplete. This nest will remain so. I mark the nest and soon discover another grassy bulb which is uninhabited. There appears to be only one pair of birds in the immediate vicinity, so I have disvovered two sham nests. There are probably one or more additional structures, but only one contains the pure white eggs. I now examine the nest which is externally the least attractive, only to find it warmly lined with cattail down, on which are deposited seven eggs. Crouching low in the grass, I await a visit from the birds, and presently both of them are preoccupied about the vacant nests. What intelligent little fellows they are to seek in this manner to conceal their treasures.

LONG-BILLED MARSH WREN

The Long-billed Marsh Wren ranges throughout eastern North America, breeding from the Gulf to Manitoba and east to Massachusetts and wintering from the Southern States into Mexico.

The long-billed marsh wren has been subdivided, though very little difference exists in their general song and habits. The type inhabiting the central United States and upper Mississippi Valley is called the prairie long-billed marsh wren. East in the United States and Canada is the summer home of the long-billed marsh wren, the true form. Swamps

and sloughs, where cattails and bulrushes grow luxuriantly either in fresh or stagnant water, is an attractive place for these little creepers.

The song is a rather hoarse, rollicking warble, suggestive of one with a chronic case of bronchitis, continued whether the bird is at rest or in the air.

The food is insectivorous, and, therefore, these little birds are of great value to mankind, although they do not haunt the cultivated sections.

From three to seven nests are built, only one of which is entirely completed and used. From external appearances one might expect all of them to be occupied. Whether these extra nests are built merely for recreation, or for the intention of deceiving their enemies, is a question open for debate.

The nests are globular, with an entrance at the side. Externally they are composed of dead rushes, grass, moss, and a liberal amount of cattail down used as a lining. From four to eight chocolate brown eggs are laid and the young hatch in about ten days.

CHAPTER XX

CREEPERS

Kinglets, Chickadees, Verdins, Nuthatches, Gnatcatchers, Titmice, and Creepers all search for insects about trees, particularly along the trunks. Others hop nimbly from branch to branch, catching insects in the air.

The brown creeper is the only true form inhabiting North America. It has stiffened tail feathers, which it uses as a prop, as do woodpeckers.

Nuthatches are more adept at climbing, as they move along the branches and down tree trunks head first, a feat which creepers and woodpeckers do not attempt. Titmice, or chickadees, and nuthatches are resident the year round in a given locality. They belong to different sub-families.

The family Paridæ comprise the two sub-families, Sittinæ, or nuthatches, and Parinæ, or chickadees. Four of the twenty species of nuthatches are American. All are climbers, but they climb downward, head first, as well as upward. They do not use the tail as a prop. The name comes from their method of placing nuts in crevices and hacking or hatching them by pounding with the bill while head hangs downward. Thirteen species of chickadees are found in North America. Chickadees seem poorly fitted to cope with our severe winters, having weak bills and being largely insectivorous. Both nuthatches and chickadees are some-

what migratory at northern limit of their range, but are usually resident where found.

Kinglets and gnatcatchers are our smallest American birds, with the exception of the humming-bird. Our most common American forms are the ruby and golden-crowned kinglets, blue-gray gnatcatchers, and verdin. They are active little birds, flitting about in search of insect food. Kinglets are partial to coniferous trees during the breeding season. While kinglets and chickadees seldom attach themselves to the tree trunks, they may often be seen hanging downward at the extreme end of a branch.

BROWN CREEPER

The Brown Creepers summer from Maine to Montana and northward to the fur countries. Occasionally they appear in the mountainous parts of Pennsylvania and New York, and they have always been observed nesting in the river bottoms near St. Louis, Missouri. They winter in southern United States generally.

The shape of the bill is like that of our wrens, which enables the birds to extract from the inner crevices of the bark various insects and their larvæ and eggs, thus making them of great economical value to the horticulturist. They do not attempt to excavate or burrow into the softest wood, but usually confine themselves to living trees covered with rough bark. The tail is long and the feathers are stiff and pointed, as it is used for support. He does not progress after the manner of the kinglets or nuthatches, but throws his head back, hops upward, moving both feet in unison.

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BROWN CREEPER.
Life-size.

WHITE-BREASTED NUTHATCH.
Life size.

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The nests are an accumulation of bark strips, grass, and feathers snugly tucked away under the loose bark on the perpendicular trunk of a tree, which may be standing on the edge of a dense woods or near a little lake.

The eggs are pure pearly white, thickly dotted about the larger end with bright reddish specks.

WHITE-BREASTED NUTHATCH

The White-breasted Nuthatch is a resident of eastern North America from Canada to the Southern States, breeding throughout the range.

Nuthatches are equally good at climbing or creeping. They are the only American birds which attempt to travel any distance down the trunk of a tree or the under side of a limb head downward. They do not brace themselves with the tail, as do the woodpeckers and creepers. They are hardy birds, spending twelve months of the year in a good locality. During the coldest weather they wander through the trees of our parks and orchards in company with the chickadees and downy woodpeckers. Like the latter, they have been improperly called sapsucker.

The birds are very handsomely colored with bluish-gray above, excepting the crown of the head, which is black. The breast is white. The call is a nasal note reminding one of the quack of a female duck.

Probably few birds are more beneficial to the fruit grower because of their feeding habits throughout the year. They destroy insects and their eggs obtained from the crevices in the bark and from the under side of green leaves.

They may be attracted about homes and orchards by putting suet out for them, and so set these industrious birds at their winter task of destroying insects and their eggs where such service avails most.

A knothole in a living tree is a favorite nesting site. Sometimes, however, the birds accept the deserted excavation of a downy woodpecker. Feathers, hair, and dry leaves are crowded into the cavity, and in April from four to nine eggs are laid. They are pure white and handsomely spotted with lilac and reddish-brown.

RED-BREASTED NUTHATCH

The Red-breasted Nuthatch is migratory in the Great Lakes region, passing the summer months from northern Maine to southern Manitoba, thence northward into the timbered region of Canada. In the Alleghanies and in western United States they have occasionally been found breeding in the mountainous regions at an altitude which would correspond to our Canadian climate. They winter from about southern breeding range south.

It is interesting to watch this nuthatch constructing a little cavity for a nesting site, usually in a white birch or poplar stub. Mr. Manly Hardy, who studied the habits of this bird in Maine, writes that in making the entrance to the nesting cavity proper the birds perforate the bark in a circle with smaller holes and then take out the center piece. A strange fact concerning the nests found by Mr. Hardy and others is that the bark at the entrance is coated with fir balsam or pitch from an inch to four inches around the

RED-BREASTED NUTHATCH.
⅞ Life-size.

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BROWN-HEADED NUTHATCH.
(Sitta pusilla.)
Life-size.

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hole. In one instance the pitch extended down for twenty-one inches and was stuck full of the red breast feathers of the nuthatches. The nesting cavities are about four inches in depth.

Four to six white eggs, thickly spotted with reddish-brown, are laid on a little nest of fine grass.

THE BROWN-HEADED NUTHATCH*

The nuthatches, like the woodpeckers, are climbers, but, unlike the latter, they climb downward as well as upward and with equal facility. Their tails are very short, and are not used for support. Their bodies also do not touch the tree "unless they are suddenly affrighted, when they crouch and look, with their beaks extended, much like a knot with a broken twig to it." A sudden clapping of the hands or a sharply spoken word will often cause a nuthatch to assume this attitude. They are busy birds, yet they are seldom too absorbed in their work of gathering food to stop and closely scrutinize an intruder. "Few birds are easier to identify; the woodpecker pecks, the chickadee calls 'chickadee,' while the nuthatch, running up and down the tree trunks, assumes attitudes no bird outside of his family would think of attempting."

They do not always seek their food in the crevices of the bark of trees, but, flycatcher-like, will fly outward from their perch and catch insects on the wing.

The Brown-headed Nuthatch is abundant from Louisiana and Florida to the southern part of Maryland. It also strays, at times, farther north, for it has been taken in

Illinois, Michigan, and Ohio. In the pine woods of the Southern States it passes a happy existence, always chattering in bird language even when its head is downward.

For its nest it selects a suitable hole in the trunk of a tree, or in a stump, that is usually not far from the ground. This it lines with grasses, fine, soft fibers, and feathers. Here are laid about six creamy-white eggs that are spotted with a brownish color. The parents are attentive to their young and seldom associate with others of their kind till these family cares are finished. Then they become more sociable and are found in companionship not only with other brown-heads, but also with woodpeckers, warblers, and chickadees.

TUFTED TITMOUSE

The Tufted Titmouse ranges throughout eastern United States, breeding from the Gulf to southern Iowa and New Jersey, and is resident throughout the breeding range.

Richard C. Harlow writes of tufted titmice: "The course of streams seems in a large measure to determine their distribution, as they are usually to be found in the vicinity of water.

"Apparently the coldest winter has no effect on them, as they seem just as contented among the February snows as in the May sunshine. In the winter they may frequently be noticed in company with nuthatches and downy woodpeckers, for whose society they show a pronounced liking. Like these birds, too, the titmice are of great economic value, as food of all these species is insectivorous. Titmice are usually found in pairs, and are, I believe, mated

TUFTED TITMOUSE.
(Parus bicolor).
About Life-size.

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throughout the year. The tufted tit is one of our few birds on whose voice the winds of winter seem to have no effect. Their loud, pleasing whistle may be heard at all seasons, especially in the early spring. It is interesting to note that the female tit can sing as well as the male. The tufted titmouse has four distinct notes, the one usually heard being the whistle already referred to, a loud, clear 'peto, peto, peto,' the note being repeated from three to seven times, usually four or five. This is occasionally varied, but the intonation is essentially the same. Another note frequently heard is a 'sic-a-dee,' something like that of the chickadee, though noticeably louder. They also have a third, a low-murmured 'dee-dee-dee,' which I have only heard at the nest or in the near vicinity of the same. The last, but not least, use to which their vocal chords are put is a distinct, snake-like hiss uttered by the female when the nest is threatened.

"I was attracted by a low, peculiar 'dee, dee,' quite different from any note I had previously heard. In a moment I had traced the sound to a tit at the entrance to its nest. A large catalpa tree leaned over the creek at this point at an angle of forty-five degrees, and up about fifteen feet, directly over the water and on the upper side of the trunk, was a knothole. The bird was at the entrance to this and in the act of placing some morsel in the bill of its mate within. In a moment I was on my way up the trunk, with my eyes glued to the hole. Each moment I expected the female to leave, but in this I underestimated her courage. Looking within, I was greeted with her peculiar hiss, but as she sat close and I was unable to insert my hand in the small

cavity, the contents were a mystery. Ten minutes later I had succeeded in borrowing a hatchet from the shanty of a gentleman of color and was again at the tree. The cavity was soon enlarged and I inserted my hand. On seeing my hand, however, she concluded that it was time to act, and she went at me bill and claws. I was hoping for a set of eggs, but imagine my disappointment when I finally discovered the contents to be one newly hatched bird, six hatching eggs, and an infertile one, which I took, and left the anxious birds in possession of their home. I paid several visits to the place after this and learned that the young of these useful birds were fed to a large extent on larvæ. They left the nest just eleven days after the eggs were hatched."

CHICKADEE

The Chickadee ranges throughout eastern North America, breeding from southern Illinois and Pennsylvania and south along the mountains, northward. Though usually resident the year around where found, in winter it migrates a short distance below the southern limits of its breeding range. It is a very bold and interesting little fellow. When the snow is on the ground and the timber land is almost void of bird life, a small band of chickadees may be seen moving freely through the undergrowth, usually accompanied by one or two woodpeckers and perhaps a white-breasted nuthatch. These birds during cold days will eat from the hand without hesitation. Many bird-lovers attract them to their dooryards by placing bread crumbs and grain on the doorsill, also by hanging up beef suet.

CHICKADEE.
About Life-size.

NIGHT 1900, BY A. W. MUMFORD, CHICAGO

CAROLINA CHICKADEE.
(Parus carolinensis.)
Life-size.

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Originally the chickadees subsisted almost entirely upon minute forms of animal life, but in recent years they have become quite omnivorous and take readily to the finer grains and berries. The birds are of great importance to the horticulturist, as they take from the cracks of the bark countless numbers of insects and their larvæ and eggs. While they may not reach the orchard and shade trees until after the breeding season, they are diligent and get in their work when they do arrive. Like the kinglets, chickadees are true acrobats and move from limb to limb head down with almost as much ease as the true creepers, which are the nuthatches.

The timber along river bottoms or old stumps on the edges of clearings are favorite nesting sites. Sometimes the nest is constructed in a natural cavity, but usually an abandoned woodpecker's hole is warmly lined with hair and feathers. In this six to ten white eggs, heavily speckled with rich reddish-brown, are laid. Nest building begins early in May and the young hatch in ten days. Both parents assist in the duties of incubation and in caring for the young. It is estimated that a pair of chickadees average 275 trips a day in caring for their brood.

THE CAROLINA CHICKADEE*

As one walks through the forest, either in winter when the snow is deep, or in summer when the sun is highest, the stillness will be broken from time to time by the merry "Chicka-dee-dee," "day, day," or "hey-de, hey-de," coming from a little throat only a few feet away.

The Carolina Chickadee is very similar to the black-

capped chickadee, with the exception that it has a decidedly shorter tail. Its range is also different, being seldom found north of a line extending from New Jersey through central Indiana, west to Texas and Indian Territory. The black-capped is seldom found south of this line.

The nest of this bird is a very cozy affair sheltered in a hollow snag or post. It often takes advantage of the deserted home of a downy woodpecker to make its nest. It also frequently excavates a cavity in some rotten snag or tree trunk. As soft wood is preferred, one generally finds the nest in a willow snag. The nest is a beautiful, soft affair, composed of hair, feathers, down, etc., and contains five to eight small pinkish-white eggs, spotted with reddish-brown most profusely at the larger end.

The chickadee is one of the farmer's best friends. During the egg-laying season of the canker-worm moth it destroys a great many eggs. Examination of the stomach contents shows between 200 and 300 canker-worm eggs in each. It has been estimated that each of these birds destroys 14,000 of these eggs during the month of egg-laying. The chickadee has been accused of destroying the buds of fruit trees, but this is not substantiated. It has been found that whenever it attacks a bud it does so to secure the worm which has burrowed into the center.

These birds are doubly useful because they remain with us the entire year and continue their destruction of eggs and larvæ. The amount of work done by a pair of these birds in destroying eggs and larvæ of injurious insects is more than could be accomplished by any man. They should, therefore, receive the greatest protection possible.

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BUSH-TIT.
(Psaltriparus mi nimus).
Life-size.

THE BUSH-TIT*

The Bush-Tit, or Least Tit-mouse, belongs to the large bird family, Paridæ. The species of this family are represented by the titmice, nuthatches, and chickadees. In distribution the family is quite cosmopolitan, and contains several species that are noted for the peculiar and beautiful nests that they build. The majority of the species, however, choose, as a site for their home, holes in trees or in fence rails and posts, or in the timbers of old buildings. These cavities are neatly and warmly lined with a thick matting of vegetable down, animal hair, and feathers. The homes of the true titmice are found in such places.

The bush-tits of the Pacific Coast of the United States, as well as nearly all the other species of long-tailed titmice, build wonderful nests which are pensile and exceedingly large when the size of the birds is considered. Minimus, the specific name of the bush-tit which we illustrate, is an appropriate name, for the bird is scarcely larger than our common humming-bird. In the forests of the Pacific Coast it is an abundant and familiar bird, and its gentle though active nature endears it to all observers of bird life. It is said that at times it is so intent in its search for insect food that it is perfectly oblivious to its surroundings and may be easily taken alive. By imitating its call-notes a number of bush-tits may always be attracted to the vicinity of the intruder.

The nest of the bush-tit is an elaborate affair about eight inches long and three inches in diameter, and in form quite

like a long purse. It is suspended from the branches of any tree that suits the fancy of the birds, and is seldom more than five or six feet above the ground. The structure is a woven mass of twigs, moss, bark fibers, leaves, and lichens. The entrance is near the top and sheltered by a cover or roof of woven moss and lichens, and also by the foliage of the twigs from which it is suspended. The opening is further strengthened by a strongly woven ring.

VERDIN

The Verdin, or Yellow-headed Bush-tit, is one of the smallest American birds. His general appearance and habits remind one of our kinglets. The verdin, however, inhabits the southwestern portions of the United States from western Texas across the arid regions of New Mexico and Arizona through Lower California. This tiny creature with his bright yellow head measures smaller than our largest American humming-bird. "This bird is no more than a bush-tit in his Sunday clothes, not a full suit, but a bright yellow head and neck dress." (Reed.)

Like our magpie and wrens, he constructs an immense nest. Thorny twigs and stems are cleverly interwoven into a nest resembling in size and shape an ordinary cocoanut. A little entrance is made at the side and into this the birds carry flower stems and feathers. Low branches in brier-like trees and shrubs are favorite nesting sites. Sometimes the birds nest among the cacti. The nests are securely fastened in a small cluster of twigs or thorns. The eggs are light blue daintily covered with minute specks of pale brown.

FROM COL. F. M. WEGERUFF

117

VERDIN.
(Auriparus flaviceps).
½ Life-size.

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GOLDEN-CROWNED KINGLET.
(Regulus satrapa, Licht).
Life-size.

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GOLDEN-CROWNED KINGLET

Aside from the ruby-throated humming-bird, the kinglets are the smallest of eastern North American birds. They are hardy little creatures, many of them wintering in southern Illinois and adjacent states. Their summer home is chiefly in the northern portions of the Northern States from Maine west to and including Minnesota, northward. In Montana, Oregon, and Washington the western Golden-crowned Kinglet occurs. Kinglets winter generally throughout the United States, except in the northern tier of states. The habits of the two species are practically the same.

These useful birds while migrating frequent highways, dooryards, and public parks in great numbers. They move about apparently unconscious of man, feeding among the lower branches and occasionally darting into the air for an insect. In feeding in patches of burdock many golden-crowned kinglets become fatally entangled in the burs. Sometimes an entire flock of six or eight meet death in the space of a few rods.

The summer home of the kinglets is infested with countless millions of insects. So abundant are these various forms of minute insect life that mosquito-proof clothing must be used. Even fur-bearing animals are unable to endure the pests, which are at their worst in May, gradually diminishing as the surface water evaporates. Upon their arrival in the northern United States the kinglets immediately resort to the coniferous groves. The males sing from the densest balsams and hemlocks, where one would expect nothing

smaller than a robin to utter such an outburst of melody.

The nests are beautiful structures built of moss, lichens, and sometimes plant down. The lining consists of hair and feathers. The nests are securely fastened to the small stems on the drooping boughs of an evergreen. Owing to the dense woods in which these birds nest and the rapidity with which they move through the coniferous trees, the nests are rarely discovered except by watching the birds carry nesting material.

RUBY-CROWNED KINGLET

The Ruby-crowned Kinglets travel northward through the central United States from the Atlantic to the Pacific. They nest in cold climates, usually in Canada, though frequently the mountains of Colorado and the Pacific Coast, with their growths of fir and hemlock, offer inviting sites. They winter south of the southern limit of breeding range.

The ruby-crowned may be distinguished from the golden-crowned by the crimson patch of feathers extending back from the base of the bill on the male birds, while the golden-crowned has orange or yellow on the top of the head. These little fellows are less common than the golden-crowned and migrate singly or in groups of two or three. They do not seem to be attracted to the seeds of the burdock, and so escape the cruel fate of the golden-crowned, which often becomes fatally entangled in the burs of the dock.

The song of the ruby-crowned is sweet and remarkable in volume for so small a bird. People of the Central States are rarely favored with the song of the golden-crowned, but the ruby-crowned sings during the spring migration. His

RUBY-CROWNED KINGLET.
About Life-size.

melodious little ditty is apparently poured forth simply because he is happy, and not for the benefit of his sober mate, for she is not in evidence.

The nests are beautiful little globular affairs constructed of moss and lined with the feathers of wild birds. They are securely fastened among the smaller branches, usually of a coniferous tree, and the nest is sometimes found with the entrance at the top, but generally the entire structure is fastened to the twigs beneath the main branch and near the extremity of the limb.

The nests are difficult to locate unless one is fortunate in contending with the millions of mosquitoes and other insect pests which inhabit the timbered lakes in April and May, when nest building is in progress. A quantity of pennyroyal rubbed on the hands and face will serve partially to protect the naturalist from these tormenting insects. Nothing is more to the liking of the kinglet than these minute gnats. They also devour other insects and their eggs and larvæ.

I have six tiny eggs of the ruby-crowned kinglet, sent me from Colorado.

BLUE-GRAY GNATCATCHER

This dainty little bird frequents the upper branches of trees where its presence is not often suspected. The note is weak and suggests the distant call of a catbird. These little birds inhabit the United States, particularly south of latitude 42 degrees. Georgia, Tennessee, the Carolinas, and Ohio are favorite states for this little gnatcatcher during

the summer months. A few nest as far north and west as upper Illinois and Indiana. In southern and eastern Michigan it is found in suitable localities where second-growth oak, elm, and hickory are found. The white outer tail feathers and small size are unmistakable field marks.

These interesting little birds seem to have a spirit of adventure in pursuit of food. They have been seen entering a long, small water pipe used as a hitching-rack for horses, and would traverse the entire distance, emerging from the other end.

The nest of the blue-gray gnatcatcher is one of the marvels in bird architecture. Externally covered with lichens held in place by cobwebs, it is securely saddled on a horizontal limb eighteen to forty feet above the ground. On the inside the nest is warmly lined with plant down, and from below one can scarcely distinguish the nest from a knot on the limb. It looks much like the nest of a humming-bird.

The four or five greenish eggs are daintily speckled with dark brown. In Ohio and southern Michigan nest building commences about May 15th, and the eggs are deposited late in May or early in June. The period of incubation is about ten days.

BLUE-GRAY GNATCATCHER.
(Polioptila cærulea)
⅔ Life-size.

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CHAPTER XXI

THRUSHES

THRUSHES are unquestionably the sweetest-voiced birds in America, though inferior to some other songsters in execution. These birds are all migratory, returning regularly to a given locality in April or May to breed. They live upon worms, winged insects, berries, and fruit. They are not sociable while nesting, but migrate in flocks, and are usually gregarious also in winter. Their bodies are cylindrical. The plumage on the upper parts is usually a uniform color of blue, brown, or gray.

"On the basis of certain details of structure thrushes are generally assigned highest rank in the class of Aves. Without pausing to discuss the value of the characters on which this classification is made, there can be no question that from an æsthetic standpoint the thrushes possess in a greater degree than any other birds those qualifications which make the ideal bird. There are many birds with brighter plumage, more striking voices, and more interesting habits, but there are none whose bearing is more distinguished, whose songs are more spiritual. The brilliant humming-birds and tanagers excite our admiration, but the gentle, retiring thrushes appeal to our higher emotions; their music gives voice to our noblest inspirations.

"Five of the true thrushes of the genus Turdus are found in eastern North America. Three of them may be

mentioned here — the veery, wood thrush, and hermit thrush — a peerless trio of songsters. The veery's mysterious voice vibrates through the air in pulsating circles of song, like the strains of an Æolian harp. The wood thrush's notes are ringing and bell-like; he sounds the matin and vesper chimes of day, while the hermit's hymn echoes through the woods like the swelling tones of an organ in some vast cathedral." (Chapman.)

WOOD THRUSH

The Wood Thrush, or Song Thrush, is quite a local bird, being partial to certain localities. It occurs at frequent intervals from the Atlantic to the Mississippi, breeding from the Ohio River into southern Canada and wintering in Central America.

The head, back, tail, and upper wing feathers are rich olive brown. The breast and lower abdomen is whitish, distinctly spotted with black, giving the bird a handsome polka-dot effect, the most striking field mark. Commonest of our thrushes, except the robin and bluebird, in size he ranks next to the robin, but is less boisterous and not so familiar. Like the olive-backed and hermit thrushes, the wood thrush is retiring and solitary in his habits.

In the estimation of many bird-lovers, it ranks first as a songster. The clear, liquid, metallic notes may be heard after sunset, coming from the dense portions of our wooded districts or from shaded lawns of villages. A mile from the author, separated by an expanse of water, I have often enjoyed the clear, bell-like notes which here vibrate more exquisitely than elsewhere.

WOOD THRUSH.
Life-size.

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WILSON'S THRUSH
¾ Life-size.

They feed usually on the ground, where the rich soil offers little resistance to their short, slender bills. Insects, berries, wild fruits, and soft vegetables, such as an overripe tomato, will often prove tempting morsels. Low, damp woods, heavily timbered roadsides, and underbrush along streams are chosen haunts. The haunts seem to be changing from dense woods to towns and about farmhouses as the primeval forest disappears and the trees grow up about residences.

The nests are placed from four to thirty feet above ground, usually in a dense shrub or vine, often about houses. In construction they are similar to the robin's nest. Roots, stems, and grass enter into the composition, and these are held in place and cemented to the branches with a moderate amount of mud. The inside of the nest is lined with grass and root. Three or four deep blue eggs, usually darker than a robin's, are laid. When sitting the mother bird is very tame and does not offer much aggressiveness.

VEERY OR WILSON THRUSH

The Veery, formerly called Wilson's Thrush, is a common bird in eastern North America west to Illinois and Wisconsin, where its near relative, the willow thrush, occurs. The veery winters in Central America. Wilson's thrush is a smaller and lighter form of the true willow thrush, but the habits, song, and disposition are identical. This bird loves the deep shady groves where fallen logs occur. Like most other thrushes, the veery and the willow thrush are celebrated songsters, though, owing to their modest ways,

they are more often heard than seen. "The veery has a double personality, or he may repeat the notes of some less vocally developed ancestor, for on occasion he gives utterance to an entirely uncharacteristic series of cackling notes, and even mounts high in the tree to sing a hesitating medley of the same unmusical 'cacks,' broken whistled calls, and attempted trills. Fortunately, this performance is comparatively uncommon, and to most of us the veery is known only by his own strange, unearthly song. His notes touch chords which no other bird's song reaches. The water thrush is inspiring, the wood and hermit thrushes 'serenely exalt the spirit,' but the veery appeals to even higher feelings; all the wondrous mysteries of the woods find a voice in his song; he thrills us with emotions we cannot express." (Chapman.)

Late in June, 1911, I had the pleasure of finding several pairs of willow thrushes occupying a little stretch of woodland in northern Illinois. My attention was first attracted by an extremely sweet note, full and low, but decidedly softer than the song of the wood thrush. My search revealed two nests, one on the ground at the base of a bush and the other a beautiful nest of bark strips, stems, and moss placed on a fallen bough three feet from the ground and concealed by overhanging ferns and vines. The nests are usually to be found among the leaves on the ground in tangled masses of briars, and quite frequently situated on small hummocks. The latter nest contained four deep blue eggs. This is probably the most southern record for the willow thrush. Minnesota and the provinces of Canada is the summer home of this retiring bird.

FROM COL. CHI. ACAD. SCIENCES.

ALICE'S THRUSH.
(Turdus aliciae.)
About ⅔ Life-size.

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THE ALICE'S THRUSH*

Alice's Thrush, or the Gray-cheeked Thrush, has an extensive range covering the whole of North America from the Atlantic Coast westward to the plains and northward to the regions beyond the Arctic Circle, and is abundant along the Arctic Coast. From its breeding-grounds in northern North America, on the approach of winter, it migrates southward to Central America.

Alice's thrush is a shy bird during the nesting period and remains within the friendly shelter of thickets, and, though unseen, "their lowest sweet song is frequently heard." Mr. Ridgway says: "The notes are said to be quite distinctive, the song being most like that of the hermit thrush, 'but differs in being its exact inverse,' beginning with its highest and concluding with its lowest notes, instead of the reverse."

Its nests are usually placed in shrubs or low branching trees at a height of but two to seven feet from the ground, and in a few instances it has been known to nest on the ground. The nest is usually compact and "composed of an elaborate interweaving of fine sedges, leaves, stems, dry grasses, strips of fine bark, and lined with fine grass. Occasionally nests are constructed with mud, like those of the common robin." It is said that this thrush will easily modify its nesting habits to suit the requirements of its environment. In the land of the deer, nests have been found that were wholly constructed of hair and lined with the hair of deer, feathers, and some moss.

In our illustration is shown its habit of scratching away the dead leaves that accumulate under the trees, in its search for grubs and worms.

OLIVE-BACKED THRUSH

From the northern United States northward the Olive-backed, or Swainson's, Thrush is common during the summer months in some localities. Nova Scotia and New Brunswick are favorite retreats of this forest-loving bird. In most of the United States east of the Rocky Mountains these birds are with us only as transients. They appear in April on their way north, and again for a week or two in October on their way to the northern part of South America, where most of them spend the winter.

Like the robin, this bird loves to glean its food from rich soil. During the migrations it frequents the dooryards, and, unfortunately, ventures too near the haunts of lurking felines. The song is soft yet penetrating. Late in the afternoon or early evening, when all about the woodland marshes is tranquil, I have listened to the vibrating notes of the olive-backed. The effect of its loud and beautiful song is enhanced by the evening hush. "It lacks the leisurely sweetness of the hermit thrush's outpourings, nor is there pause, but in lower key and with greater energy it bubbles on rapidly to a close rather than fading out with the soft melody of its renowned rival. There are also a variety of other notes." (J. Dwight, Jr.)

The nests are placed in both coniferous and deciduous trees, usually not more than six or eight feet high. I found

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OLIVE-BACKED THRUSH.
(Turdus ustulatus swainsonii).
Nearly Life-size.

HERMIT THRUSH.
¾ Life-size

several in the vicinity of Butternut Lake, Wisconsin. In general structure the nests were very similar to the robin's, but smaller, to correspond with size of the bird. The three or four eggs are deep blue, beautifully dotted with deep brown and chestnut. Nest building begins early in June and before the month is over most of the young have hatched.

HERMIT THRUSH

The Hermit Thrush ranges through eastern North America, breeding from northern Michigan and Massachusetts northward and southward along the Alleghanies to Pennsylvania, and wintering from southern Illinois and New Jersey to the Gulf States.

"In the Canadian fauna the hermit thrush, the most definite thrush to study, comes a month before the olive-backed thrush arrives, while the snow wraiths still linger in the shadowy forests. In the fall it tarries as long after the olive-backed has departed.

"When the hermit thrush appears in the spring its song is wonderfully sweet, but it does not come into full possession of its voice until some time after its arrival. It is usually conceded to be our most beautiful singer. In early August it is still in full song, but by the middle of the month the song is thin, suggesting the imperfect attempts of a young bird. Later than that it seldom sings.

"It is to be regretted that so many of the young fail to mature. A record kept for five years, containing the history of fourteen nests and forty-seven eggs, shows that only nineteen fledglings left the nest. I wish to emphasize the

fact that these very beautiful, insectivorous birds lead a most precarious existence, having to contend not only with wild foes but with domestic cats.

"In two or three cases, I have found the hermit thrush very timid. Generally, the bird flies from the nest as a person approaches, or runs away over the leaves with head and tail drawn down so as to appear less conspicuous, mounts a branch at a safe distance, slowly raises and lowers its tail, then glides from sight. One or two have been so tame that I have had to put my hand out as if to touch them, in order to drive them from the nest."

"Sometimes it sings during the winter in Florida, and also while migrating; but if you would hear this inspired songster at his best you must visit him in his summer home. The hermit thrush's song resembles that of the wood thrush in form, but it is more tender and serene. 'O spheral, spheral! O holy, holy!' Mr. Burroughs writes as its opening notes, and there is something about the words which seem to express the spirit of heavenly peace with which the bird's song is imbued." (Chapman.) The nest of moss, coarse grass, and leaves, lined with pine needles and rootlets, is placed on the ground, generally under a low fir tree. Three or four greenish-blue eggs are laid.

ROBIN

The range of the Robin is eastern North America to the Rocky Mountains, breeding from the northern part of the Gulf States to the Arctic Ocean, and wintering from Illinois and New Jersey southward. From the Rocky

ROBIN.
Life-size.

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Mountains westward a paler plumaged bird, called the Western robin, is found, with habits similar to those of the robin east of the Great Plains.

Robins join us north of the Ohio early in March, immediately announcing their presence by warbling gently, perhaps in the immediate vicinity of their last year's nest. The migrating robins which go north of us to spend the summer are not so partial to habited sections until they reach their destination, and are more apt to be found in small flocks in wooded pastures, parks, or underbrush.

The robin feeds largely upon earth worms, grubs, berries, and is particularly fond of cherries. So persistent are they in raiding the fruit trees during cherry time that some farmers forget the birds' many virtues and destroy them. They are found in large flocks in the South, where the pot hunters bag them.

A friend gives the following account of the robin's industry, and the sparrow's adaptation of means to ends: "I observed a robin with about twenty sparrows following. He soon dragged forth a worm, when a sparrow snatched it from his beak and flew off to its nest. With an air of indignation, the robin put the remaining sparrows to flight, when he continued his hunt. Instantly, the sparrows returned, and, when a second worm rewarded the robin's industry, another sparrow seized it and made off. The robin seemed as much surprised and hurt as before. This was continued, until I saw perhaps thirty or forty worms thus taken. I know not how many were taken before I arrived or after I left. The sparrows evidently had nestlings and were taking the worms for them."

Robins frequently create needless commotion among the birds, yet we cannot help but admire them. The way they run rapidly over our lawns, digging earth worms almost beneath the spraying hose, demonstrates their fondness for the habitations of man, although, like the wood thrush, a few still retire to the uncultivated land to nest.

Unless the nest is in a conspicuous place, where people frequently pass, the female becomes greatly disturbed at the approach of an intruder, and chirps angrily, calling to her mate to join her in the attack. Many a sitting robin would remain unnoticed if it were not that her suspicious nature invites attack. Unfortunately, the family cat too often causes tragedies in the robin's home. It is well to kill the cat or protect the nest from her ravages.

A careful observer relates that a pair of robins nested for five years in an old apple tree in their yard. On the sixth year, when they returned to the old nesting site, they appeared disconsolate for some days. They then went over to an old pear tree and began their nesting and were again happy. When the leaves came forth, the apple tree was found to have been winter-killed. The birds had wished the protection of a tree with foliage.

We are apt to find the robin's nest on a fence post, in one of the orchard trees, in a shade tree, or in some nook or corner of the house or barn. The nests are composed of roots and grass, strongly cemented with a quantity of mud. The lining is usually entirely of soft, dry grass. The robin's egg is easily described by the term, "robin's-egg blue," which shade is given to the three or four elliptical eggs laid in April or May. A second brood is hatched

COL. CHI. ACAD. SCIENCES.

VARIED THRUSH.
(Hesperocichla naevia.)
About ½ Life-size.

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WHEATEAR.
(Saxicola oenanthe)
Life-size.

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from forty-five to sixty days later, the male in the meantime taking charge of the first brood after they leave the nest.

VARIED THRUSH

The Varied Thrush is a handsome bird, inhabiting the Pacific Coast region of the United States, breeding from California northward into the wilds of Alaska, but principally in British possessions. In spite of its supposed Western range, three or four specimens have been recorded along the Atlantic Coast in New Jersey, New York, and Massachusetts.

The varied thrush feeds chiefly upon the ground, obtaining insects and bugs by scratching away the leaves and exposing the earth in damp situations. They also are fond of wild berries and fruit.

The mating song in early spring and later in Canada is beautiful, reminding one of the robin. It is sometimes, though incorrectly, called Western robin.

The nests are placed in ordinary localities, usually a few feet above the ground in a shrub. Dry grass, moss, and lichens, intermingled with dry stem rootlets are used in constructing the nest. The eggs are pale grayish-blue, sparingly marked with brown specks.

WHEATEAR

The range of the Wheatear, or Stone-chat, is nearly cosmopolitan, occurring in Europe, North Africa, Asia, and Greenland. The accidental visitors to this continent

have been observed in Labrador, Nova Scotia, and other points along the Atlantic Coast. In the British Isles he is one of the commonest birds.

Mr. Saunders writes: "From early spring onward, the wheatear is to be seen jerking its white tail as it flits along, uttering its sharp 'chack-chack,' on open marshes, moors, and uncultivated places." Some ascend the mountains almost to the highest altitudes. The song of the male is rather pretty, and the bird also displays considerable powers in imitating other species.

The nests are usually well hidden among the crevices of rocks and boulders, sometimes in an old well, a quarry, a gravel pit, in excavations made by sand martins, or even in deserted rabbit burrows. The nest is merely an accumulation of grass, moss, hair, and other soft material, in which four to six pale blue eggs are laid in May and June.

BLUEBIRD

The common and familiar Bluebird is an inhabitant of all the States east of the Rocky Mountains, from the Gulf northward into Canada. It winters as far north as southern Illinois in the Mississippi Valley and Pennsylvania in the east, thence south to the Gulf. In the spring it is one of the first migrants to arrive in the Northern States, and is always welcomed as an indication of the final breaking up of winter.

The upper parts of the plumage in both sexes are blue, darker in the male, but the shades vary greatly in both sexes. The breast of the male is a rich chestnut brown;

BLUEBIRD.
Life-size.

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that of his mate is several shades paler. In America we have no other member of the family, save the Western form of the bluebird, where brown is not the predominating color among the thrushes.

The notes of the bluebird are as sweet as they are simple. There is something in the character of the notes that reminds one of the wood pewee's song, if such the latter may be called. Their sweet carols convey the idea that the birds take life seriously. As the bluebirds are passing overhead late in October, their sad notes bring a realization that the days of blossoms and verdure are past, and bleak, wintry weather is in store.

At no season of the year does this species appear overdemonstrative. The actions at all times are modest and reserved, seeming to show the result of good breeding. He has neither the cunning of the jay, the aggressiveness of the kingbird, nor the cherry-stealing habit of his near relative, the robin.

The bluebird's arrival is simultaneous with that of the meadowlark and robin, a trio that inspires the feeling that spring has really returned. The most sentiment is associated with the return of the bluebird, because the mellow warble is uttered about our dooryard, perhaps on a nearby wire.

"The bluebird has not been accused of stealing fruit or of preying upon crops. An examination of 300 stomachs showed that 76 per cent of the food consists of insects and their allies, while the other 24 per cent is made up of various vegetable substances, found mostly in stomachs taken in winter. Beetles constitute 28 per cent of the whole food,

grasshoppers 22, caterpillars 11, and various insects, including quite a number of spiders, comprise the remainder of the animal diet. All these are more or less harmful, except a few predaceous beetles, which amount to 8 per cent. In view of the large consumption of grasshoppers and caterpillars, we can condone this small offense. The destruction of grasshoppers is noticeable in August and September, when these insects form more than 60 per cent of the diet.

"It is evident that in the selection of its food the bluebird is governed more by abundance than by choice. Predaceous beetles are eaten in spring, as they are among the first insects to appear, but in early summer caterpillars form an important part of the diet, and are replaced a little later by grasshoppers. Beetles are eaten at all times except when grasshoppers are more easily obtained. So far as its vegetable food is concerned, the bluebird is positively harmless."

They take readily to artificial nesting sites, and appreciate bird boxes and cotes that are erected for that purpose. Every dooryard should be adorned by such a bird house. They return annually to build their nests in the hole in the old apple tree. Dry grass is the principal composition used in constructing the abode. Four or five light blue or sometimes pure white eggs are laid in April or early May. Frequently a second brood is raised in July.

"Brave little fellow! the skies may be dreary,
Nothing cares he while his heart is so cheery.
Hark! how the music leaps out from his throat,
Hark! was there ever so merry a note?"

MOUNTAIN BLUE BIRD.
$\frac{3}{5}$ Life-size.

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MOUNTAIN BLUEBIRD

This handsome bird of the Thrush family is more delicately colored than our Eastern bluebird. It may be found in the territory from Colorado to the Pacific, ranging northward through the mountains to the Hudson Bay country. In some localities it is known as the Rocky Mountain, or Arctic, Bluebird. The habits are similar to those of the bluebird.

The birds feed upon insects, worms, wild fruit, and seeds. They are able to adapt themselves to climatic conditions and weather some of the severest storms.

In certain portions of our Western States the birds show a preference for the habitation of man, and build their nests in nooks and crevices about barns and sheds. Frequently the deserted excavations constructed by various woodpeckers are used as nesting sites. Dry grass is the chief and often only article used in constructing the nest. Four or five pale blue eggs are laid. Like our Eastern bluebird, the young, when able to fly, are escorted by the male, while the female prepares the nest for another setting.

MANDARIN DUCK.
(Aix galerita).
⅔ Life-size

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CHAPTER XXII

FAMOUS FOREIGN AND INTRODUCED BIRDS

THESE birds are famous for various reasons. Most of them are noted for striking characteristics which will be brought out in the special article descriptive of each.

The lyre bird and motmot are noted for their remarkable tails. The parrot is famous for its bright colors, its peculiarities of claws and beak, and for its ability to speak. The robin redbreast, the skylark, and nightingale have become household words and universal favorites in Europe.

The pheasant family includes nearly one hundred species, all of which, with the exception of the Yucatan turkey and the wild turkeys of the United States, are natives of the Old World, where more species are found in southern Asia than elsewhere. To this family belong the peacock and the interesting jungle fowls from which our domestic chickens have been developed. Many of the pheasants are remarkably beautiful birds. Some of these foreign species have been successfully introduced into the Pacific States and in British Columbia.

THE MANDARIN DUCK*

"A more magnificently clothed bird," says Wood, "than the male Chinese Mandarin Duck can hardly be found, when in health and full nuptial plumage. They are natives

of China and Japan, and are held in such high esteem by the Chinese that they can hardly be obtained at any price, the natives having a singular dislike to seeing the birds pass into the possession of Europeans."

Though web-footed, the birds have the power of perching, and it is a curious sight to watch them on the branches of trees overhanging the pond in which they live, the male and female being always close together, the one gorgeous in purple, green, white, and chestnut, and the other soberly appareled in brown and gray. This handsome plumage the male loses during four months of the year, from May to August, when he throws off his fine crest, his wing-fans, and all his brilliant colors, assuming the sober-tinted dress of his mate. The summer duck of America bears a close resemblance to the mandarin duck, both in plumage and manners, and at certain times of the year is hardly to be distinguished from that bird.

"The Chinese," says Dr. Bennett, "highly esteem the mandarin duck, which exhibits, as they think, a most striking example of conjugal attachment and fidelity. A pair of them are frequently placed in a gaily decorated cage and carried in their marriage processions, to be presented to the bride and groom as worthy objects of emulation."

"I could more easily," wrote a friend of Dr. Bennett's in China, to whom he had expressed his desire for a pair of these birds, "send you two live mandarins than a pair of mandarin ducks." This foreign duck has been successfully reared in zoölogical gardens, some being hatched under the parent bird and others being quite successfully hatched under the domestic hen.

BLACK SWAN.
(Cygnus atratus).
¼ Life-size.

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THE BLACK SWAN*

Australia is the home of the Black Swan, and it is invested by an even greater interest than attaches to the South American bird, which is white. The Dutch navigator William de Vlaming, visiting the west coast of Southland, sent two of his boats on the 6th of January, 1697, to explore an estuary he had found. There their crews saw at first two and then more black swans, of which they caught four, taking two of them alive to Batavia; and Valentyn, who several years later recounted this voyage, gives in his work a plate representing the ship, boats, and birds, at the mouth of what is known from this circumstance as the Swan River, the most important stream of the thriving colony of West Australia, which has adopted this swan as its armorial symbol. Subsequent voyagers, Cook and others, found that the range of the species extended over the greater part of Australia, in many districts of which it was abundant. It has since rapidly decreased in number there, and will most likely soon cease to exist as a wild bird, but its singular and ornamental appearance will probably preserve it as a modified captive in most civilized countries, and it is said perhaps even now there are more black swans in a reclaimed condition in other lands than are at large in their mother country.

The erect and graceful carriage of the swan always excites the admiration of the beholder, but the gentle bird has other qualities not commonly known, one of which is great power of wing.

When left to itself, the nest of the swan is a large mass of aquatic plants, often piled to the height of a couple of feet, and about six feet in diameter. In the midst of this is a hollow which contains the eggs, generally from five to ten in number. They sit upon the eggs between five and six weeks.

THE WHITE SWAN*

This magnificent bird is well known from being kept in a half-domesticated condition throughout many parts of Europe, whence it has been carried to other countries. In England, according to Newton, it was more abundant formerly than at present, the young being highly esteemed for the table.

The swan was introduced into England in the reign of Richard Cœur de Lion; but it is now so perfectly naturalized that birds having the full power of flight remain in the country. There is no evidence to show that its numbers are ever increased by immigration from abroad, though it is known to breed as a wild bird in the extreme south of Sweden, whence it may be traced in a southeasterly direction to the valley of the Danube.

The nest of the swan is a large mass of aquatic plants, is often two feet high and six feet in diameter. The eggs are from five to nine in number, of a grayish-olive color. The young are hatched in five to six weeks, and when hatched are clothed in sooty-gray down, which is succeeded by feathers of dark soot-gray. This suit is gradually replaced by white; but the cygnets are more than a year old before they lose all trace of color and become white.

WATER LILIES.

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GREEN WOODPECKER (Europe).
(Picus viridis).
About 4/5 Life-size

The swan of North America is considerably larger than that of the Old World. The first species is the trumpeter, so called, of which the bill is wholly black, and the second (*Cygnus columbianus,* or *americanus*) has the colored patches on the bill of less extent and deepening almost into scarlet.

THE GREEN WOODPECKER*

Not unlike its relatives in our own country, the beautiful Green Woodpecker of foreign lands finds in a tree "a castle, a pasture, a larder, a nursery, an alarm-drum, and a lute." It frequents the ancient forests of Europe, Asia, where it is even found to some extent in the intemperate climate of Siberia, and in northern Africa. As it is a bird of wide distribution, found in many countries and known to all classes of people, it has been given many common names. Space forbids an enumeration of all of these names, but a few of the more common ones may be mentioned. Some of them, such as Hew-hole, Pick-a-tree, Awl-bird, and Nickapecker, are eminently suggestive of the bird's habits, and the names High Hoe Popinjay, Yoppingall, and Whittle are not without meaning.

The green woodpecker is quite frequently called the Rain-bird, or Rain-fowl, for it is very active and quite noisy as the "drought begins to soften," a short time before a shower. At this time its harsh note, which has been described as sounding like "glu, glu, glu, gluck," is much more in evidence.

The green woodpecker not only feeds upon the grubs that bore in the wood of trees, but also from the various

insects that it finds upon the surface. It will also feed upon the eggs of insects, and ants are dainty morsels of food, and of these it destroys a large number, seeking them upon the ground as well as on the trees.

The green woodpecker nests either in a natural hole in a tree or in one that it has excavated.

The woodpeckers are among our most useful birds. Though they do not feed to any extent upon the insect pests of the meadow, the grain field, and the garden, they do destroy a large number of the borers and other insects that are injurious to trees. "The aged tree is all to the woodpecker, and the woodpecker is much to the aged tree."

THE EUROPEAN KINGFISHER*

Rarely indeed is this charming bird now found in England, where formerly it could be seen darting hither and thither in most frequented places. Of late years, according to Dixon, he has been persecuted so greatly, partly by the collector, who never fails to secure the brilliant creature for his cabinet at every opportunity, and partly by those who have an inherent love for destroying every living object around them. Gamekeepers, too, are up in arms against him, because of his inordinate love of preying on the finny tribe.

The Kingfisher is comparatively a silent bird, though he sometimes utters a few harsh notes as he flies swift as a meteor through the wooded glades. Sometimes he will alight on stumps and branches projecting from the water, and sit quiet and motionless, but on your approach he darts

From col. Chi. Acad. Sciences.

EUROPEAN KINGFISHER.
(Alcedo ispida.)
9-10 Life-size.

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LYRE BIRD.
$\frac{1}{8}$ Life-size.

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quickly away, often uttering a feeble "seep, seep" as he goes.

The nest is said to be made of the fish bones ejected by the bird, while the real facts are that they not only nest, but roost, in holes, and it must follow that vast quantities of rejected fish bones accumulate, and on these the eggs are of necessity laid.

These eggs are very beautiful objects, being of a deep pinkish hue, usually six in number.

The food of the kingfisher is not composed entirely of fish, the remains of fresh-water shrimps being found in their stomachs, and doubtless other animals inhabiting the waters are from time to time devoured.

The English kingfisher, says Dixon, remains throughout the year, but numbers perish when the native streams are frozen.

THE LYRE-BIRD

If Australia were noted for no other thing than the ancient and strange animal forms which are to be found nowhere else on the earth, it would still be a wonderful continent. Not the least remarkable of these forms is the Lyre-bird.

The tail is the bird's crowning glory, at once giving it a name and fame. Like many other cumbersome things, the lyre-bird's tail is used for ornament during a part of the year only, being donned at the mating season and doffed at the close of the nesting period.

Authorities agree that the lyre-bird's powers of song are remarkable. It seems to have the power of mocking

almost every other bird, as well as the barking of the dingo, besides possessing a sweet song of its own. One author states that for the first two hours of the morning it repeats over again its own song, then gradually changes it to imitate other birds, ending its four-hour song period with imitations of all the other birds within hearing, then remaining silent for the rest of the day.

The nest is a dome-shaped affair with the opening in one side, made of "small sticks, interwoven with moss and fibers of roots." "The single egg laid is of a very dark color, appearing as if it had been blotched over with ink." The young emerges from the egg a downy white ball, perfectly helpless, and remains in the nest for several weeks. The food seems to consist of insects, myriapods, and snails, of which large quantities must be destroyed to satisfy a bird of this size. LYNDS JONES.

THE RED BIRD OF PARADISE*

Birds of Paradise are found only in New Guinea and on the neighboring islands. The species presented here is found only on a few islands.

In former days very singular ideas prevailed concerning these birds, and the most extravagant tales were told of the life they led in their native lands. The natives of New Guinea, in preparing their skins for exportation, had removed all traces of legs, so that it was popularly supposed they possessed none, and on account of their want of feet and their great beauty, they were called birds of paradise, retaining, it was thought, the forms they had borne in

RED BIRD OF PARADISE.
(Paradisea raggiana).
$\frac{1}{5}$ Life-size.

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YELLOW-THROATED TOUCAN.
½ Life-size.

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the Garden of Eden, living upon dew or ether, through which it was imagined they perpetually floated by the aid of their long, cloud-like plumage.

The sounds uttered by this bird are very peculiar, resembling somewhat the cawing of the raven, but change gradually to a varied scale in musical gradations, like "he, hi, ho, how!" He frequently raises his voice, sending forth notes of such power as to be heard at a long distance. These notes are "whack, whack," uttered in a barking tone, the last being a low note in conclusion.

While creeping amongst the branches in search of insects, he utters a soft clucking note. During the entire day he flies incessantly from one tree to another, perching but a few moments, and concealing himself among the foliage at the least suspicion of danger.

"To watch this bird make its toilet is one of the most interesting sights of nature; the vanity which inspires every movement, the rapturous delight with which it views its enchanting self, its arch look when demanding the spectator's admiration, are all pardonable in a delicate creature, so richly embellished, so neat and cleanly, so fastidious in its taste, so scrupulously exact in its observances, and so winning in all its ways."

YELLOW-THROATED TOUCAN

The Yellow-throated Toucan, a large-billed bird found in tropical America, bears some resemblance to the hornbill of Asia and Africa. The most striking feature of this handsome bird is the monstrous bill, and the bird's chief

mission seems to be to care for it, as it frees its beak from every stain and carefully tucks it away among its feathers or rests it on its back while sleeping. The bill seems entirely out of proportion to the size of the bird, but it is of a light, honeycombed structure, and is not so heavy as it appears. It has been suggested that the bill masticates the food, since the bird has no gizzard. The awkward, hopping gait is in striking contrast to the easy, graceful flight. It feeds on fruits principally, but eggs, fish, and even small birds may enter into the diet. While feeding, a sentinel is stationed to give the cry, "Toucano," from which the name is derived. Toucans live in flocks in forests, nesting in hollow trees. These birds are killed not only because of their beautiful plumage but also as food.

THE CASSOWARIES*

"Two important features serve at once to distinguish the Cassowaries and their near allies, the emeus, from the ostriches and the rheas, the first of these being that the feathers have airshafts of such large size as to make them practically double, while the second peculiarity is to be found in the eggs, which, instead of being light-colored and smooth, are dark green in color and granulated in texture."

Like the ostrich, the cassowaries belong to a group of flightless birds, their wings being so rudimentary as to be practically invisible externally. The visible portion of the wings consists of about five black quills, which have no barbs, and resemble coarse bristles. Their heads are devoid of feathers and on the crown there is a prominence which

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CASSOWARY.
(Casuarius galeatus).
½ Life-size.

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is simply an extension of the bones of the skull. The feathers of the body have a loose and coarse appearance and are dark-colored and glossy. The feathers do not appear at all like those of the plumage of flying birds, and seem more like hairs. The cassowaries possess three toes on each foot, the inner ones having a very long claw.

There are about nine species of the cassowaries, all being classed by ornithologists in the genus *Casuarius*. Of these, probably the most familiar is the helmeted species of our illustration (*Casuarius galeatus*), which is a native of the island of Ceram. The other species inhabit either Australia, New Guinea, or some of the neighboring islands. The Australian species is the largest of them all, and when it stands erect is more than five feet in height. The skin of the head and the upper part of the neck of the helmeted cassowary is of a dull blue or purple color, with a reddish tint. The wattles are pendant and similar to those of the turkey.

The cassowaries inhabit thick forests, and are so shy and wary that they are seldom seen in their native haunts. They are easily tamed, and in captivity they are very docile. It is said, however, that in a wild state they do not hesitate to defend themselves, and kick with great force and effect. Their food is without doubt of a vegetable nature, though some authorities claim that they also feed upon the eggs of other birds. They are inclined to feed in flocks. Observers say that the Australian species, which seems to inhabit only the rocky, wooded districts, is usually seen in flocks of eight or ten individuals. One species, taken young, may be reared by hand.

SOUTH AMERICAN RHEA OR OSTRICH*

South American Rhea is the name by which this immense bird is known to science. It is a native of South America, and is especially numerous along the River Plata. Usually seen in pairs, it sometimes associates in flocks of twenty or thirty, and even more have been seen together. Like all the members of the family, it is a swift-footed and wary bird, but possesses so little presence of mind that it becomes confused when threatened with danger, runs aimlessly first in one direction and then in another.

For our knowledge of the rhea and its habits we are chiefly indebted to Mr. Darwin, and we shall use his language in this account of the bird. The birds generally prefer running against the wind, yet, at the instant, they expand their wings and, like a vessel, make all sail.

Natives easily distinguish, even at a distance, the male from the female. The former is larger and darker colored, and has a larger head. It emits a singular, deep-toned hissing note. Darwin, when he first heard it, thought it was made by some wild beast. It is such a sound that one cannot tell whence it comes, nor from how far distant.

"When we were at Bahia Blanca, in the months of September and October, the eggs of the rhea were found in extraordinary numbers all over the country. They either lie scattered singly, in which case they are never hatched, or they are collected together into a hollow excavation which forms the nest. Out of the four nests which I saw, three contained twenty-two eggs each, and the fourth twenty-

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SOUTH AMERICAN RHEA.
(Rhea americana).
⅛ Life-size

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IMPEYAN PHEASANT.
(Lophophorus impeyanus)
2/5 Life-size.

seven. The Gauchos unanimously affirm, and there is no reason to doubt their statement, that the male bird alone hatches the eggs, and that he for some time afterward accompanies the young."

THE IMPEYAN PHEASANT*

This beautiful bird, which is noted for the wonderful color and metallic iridescence of the male's plumage, is a native of the higher and colder regions of India. It is greatly admired by the natives of India, who have given it the name Monal, or the bird of gold. The metallic luster of its plumage is so very marked that some authorities have been led to give this bird the specific name *resplendens.* The plumage of the males of nearly all the pheasants is quite as strikingly brilliant, while that of the female is much more somber.

"The monal is found on almost every hill of any elevation, from the first great ridge above the plains to the limits of forest, and in the interior it is the most abundant of our game birds."

When the severe weather of winter sets in, the pheasants descend into the forests of lower altitudes, where the ground is covered with a thick layer of decaying leaves. Here they find an ample supply of insect food. Though a few of the older birds remain in higher altitudes throughout the winter, the majority descend to lower levels, and in the spring again ascend the mountain sides, as the snow and frost disappear.

"The call of the monal is a loud, plaintive whistle,

which is often heard in the forest at daybreak or toward evening, and occasionally at all hours of the day." It is an omnivorous feeder, its food consisting of grains and other seeds, insects, fleshy roots, and succulent herbage. The length of its wings, which are very short for the size and weight of the bird, shows the Impeyan Pheasant to possess terrestrial habits. Its flights, though quite rapid, are short, and taken, as a rule, only when frightened.

The impeyan pheasant does not seem to bear a change of climate. Many attempts to domesticate them have been made in several countries.

GOLDEN PHEASANT

This beautiful bird is a native of China, as are most of the pheasants. It is being bred with partial success in various places in the United States; for years it has graced city parks. The introduction of these birds into Washington and Oregon has been successful. Great flocks of them are seen in the fields and at the edges of the woods. They have been protected by law until they are so numerous that a limited open season for hunting is now allowed.

In various other States these fine birds have been introduced with varying success. In Illinois, Missouri, and various places in New York and the New England States enterprising citizens have placed colonies of them. If they are kept within an enclosure until they become used to the locality, they seem to remain and increase in number; if not, they often scatter and are killed by hunters who mistake them for tropical birds.

GOLDEN PHEASANT
$\frac{1}{12}$ Life-size
Tail somewhat shortened.

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SILVER PHEASANT.
(Phasianus nycthemerus).
¼ Life-size.

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The flesh, as in the case of other pheasants, is fine eating, but the beauty is such that one is reluctant to kill them for food. The bright artificial fish baits are usually made from the tips of the bright-colored feathers.

THE SILVER PHEASANT*

The magnificent Silver or Penciled Pheasant, a native of China, which has long been introduced into Europe, has been considered to be fitted only for the aviary. The pheasant was long thought to have been brought from the banks of the River Phasis, now the Rioni, in Colchis, and introduced into Europe by the Argonauts. Newton says that, as a matter of fact, nothing is known on this point; and, judging from the recognition of the remains of several species referred to, both in Greece and in France, it seems not impossible that the ordinary pheasant may have been indigenous to England.

It was thought only a few years ago that the successful propagation of pheasants was problematical, but now the Mongolian, the English ring-necked, and the Chinese golden pheasant each has found a home in some of the States, where it is increasing in numbers. Why may not a similar experiment be made with the silver pheasant?

In England within recent years the practice of bringing up pheasants by hand has been extensively followed, and the numbers so reared, says Newton, vastly exceed those that are bred at large. The eggs are collected from birds that are either running wild or kept in a mew, and are placed under domestic hens; but, though these prove most

attentive foster-mothers, much additional care on the part of the keepers is needed to insure the arrival at maturity of the chicks; for, being necessarily crowded in a comparatively small space, they are subject to several diseases which often carry off a large proportion, to say nothing of the risk they run of not being provided with proper food or of meeting an early death from some predatory animal.

RING-NECKED PHEASANT

The Ring-necked Pheasant, a native of China, has been introduced and acclimated in the States of California, Oregon, and Washington, and also in British Columbia. In many localities they have become so abundant that an open season is allowed for hunting them. So beautiful are they that taxidermists are kept busy in the open season mounting these birds as an article of commerce. Some of the Central and Western States have introduced these pheasants with more or less success. Dr. Dawson, in his "Birds of Ohio," says: "The successful introduction into our State of this splendid game bird really marks a new era in the history of sports, and its event should be hailed with delight by all true sportsmen. Quick on the wing, rapid, prolific, hardy, this handsome pheasant is admirably adapted to take the place of those larger native game birds, the wild turkey, the prairie chicken, and the ruffed grouse, which are no longer available to us." They, like grouse, more than pay for the grain they consume, by destroying insects. It is said the bird introduced with the greatest success is a cross between the English ring-necked and Mongolian pheasants.

RING-NECKED PHEASANT.
(Phasianus torquatus).
⅛ Life-size.

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GREEN JAPANESE PHEASANT.
(Phasianus versicolor).
About ⅓ Life-size.

THE JAPAN PHEASANT*

Originally the pheasant was an inhabitant of Asia Minor, but has been by degrees introduced into many countries, where its beauty of form, plumage, and the delicacy of its flesh made it a welcome visitor. The Japan Pheasant is a very beautiful species, about which little is known in its wild state, but in captivity it is pugnacious. It requires much shelter and plenty of food, and the breed is to some degree artificially kept up by the hatching of eggs under domestic hens and feeding them in the coop like ordinary chickens, until they are old and strong enough to get their own living.

The food of this bird is extremely varied. When young it is generally fed on ants' eggs, maggots, grits, and similar food, but when it is full grown it is possessed of an accommodating appetite, and will eat many kinds of seeds, roots, and leaves. It will also eat beans, peas, acorns, berries, and has even been known to eat the ivy leaf, as well as the berry.

This pheasant loves the ground, runs with great speed, and always prefers to trust to its legs rather than to its wings. It is crafty, and when alarmed it slips quickly out of sight behind a bush or through a hedge, and then runs away with astonishing rapidity, always remaining under cover until it reaches some spot where it deems itself safe. The male is not domestic, passing an independent life during a part of the year, and associating with others of its own sex during the rest of the season.

The nest is very rude, being merely a heap of leaves and

grass on the ground, with a very slight depression. The eggs are numerous, about eleven or twelve, and olive-brown in color. In total length, though they vary considerably, the full-grown male is about three feet. The female is smaller in size than her mate, and her length a foot less.

THE DOMESTIC FOWL*

The writers of antiquity used the term fowl to include all the members of the bird tribe, and, in some cases, the young of other animals. Feathered creatures, no matter what their habits, were not called birds, neither were they separated into classes other than the "Fowls of the Air," "Fowls of the Sea," "Fowls of the Earth," and similar descriptive divisions.

In the seventeenth and the earlier part of the eighteenth century the word fowl was applied to any large feathered animal and the term bird to those of less size. In early times the word bird was used in the sense of brood and included the young of all animals. In an early act of Parliament of Scotland we find the expression "Wolf-birdis," referring to the very young wolf.

At the present time the term fowl in its wider sense is generally used to include all the forms of farm poultry, both when living and when prepared for food. More specifically, it is applied to the domestic cock and hen, or, as they are more familiarly called, chickens. The word chicken appropriately belongs to the common fowl when under one year of age, yet it is used to indicate those of any breed and of any age between birth and maturity. In this connection

ROOSTER AND HEN.

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it is of interest to note that in the English language the common fowl has no distinctive name. The term hen, frequently used, should be applied only to the female of this and other domestic fowls.

The progenitor of the common fowl is generally conceded to be the Red Jungle Fowl, though there are three other wild species, all oriental. This species is a native of India, a part of China, the adjacent islands, and the Philippines. Its habits are diversified, for we are told it may "be found in lofty forests and in the dense thickets, as well as in bamboo jungles, and when cultivated land is near its haunts it may be seen in the fields, after the crops are cut, in straggling parties of from ten to twenty."

This wild species closely resembles the breed of poultry fanciers called the "Blackbreasted Game," but the crow of the wild cock is not as loud or prolonged as that of the tame one.

FARM-YARD FOWLS*

Silver-spangled Hamburg. These fowls are among the most highly developed of all the spangled varieties. They are valued as egg producers and rank among the best. They are very impatient of confinement, and are said to succeed best when they can have the run of a clean pasture or common. A large grass walk is recommended by the most successful breeders. Six-foot fences, where they are intended to be restricted to certain limits, will not be more than sufficient for the safe custody of these chickens. The hens, if young, lay nearly throughout the year, but the eggs, which are white, are small, weighing about one and one-half

ounces each. As they are such abundant layers, they seldom want to sit. The chickens are healthy and strong, requiring no unusual care. When first hatched they are cream-colored. They feather early and the barred character of the penciled birds quickly appears. In the rapidity of their movements they are said to rival even the active little bantams.

Plymouth Rock Hen and Chickens. In March, 1873, Rev. H. H. Ramsdell thus describes the origin of this valued fowl:

"Some thirty years since, John Giles, Esq., introduced a fowl into this vicinity — Putnam, Conn. — called the Black Java. Its plumage was black and glossy, its size large, pullets sometimes reaching eleven pounds in weight. It was an unusually hardy bird, with a dark, slate-colored, smooth leg and the bottom of the feet yellow. The hens proved good layers and of extra quality for the table. I sold a few of these birds to a Mr. Thayer, of Pomfret, of whom Mr. George Clark, of Woodstock, Conn., purchased some he supposed the same. Mr. Clark, passing Mr. Joseph Spaulding's yard one day, noticed his fine flock of Dominiques and proposed bringing a few of his Javas over to cross with them, to increase the size. Mr. Spaulding accepted the offer, and when the chickens were grown rejected the black ones and those with double comb, reserving to breed from only the single-comb birds, which retained the Dominique color, or near it. One of the first products from the eggs of this cross was a hen which weighed nine and three-fourths pounds. We soon had a fine flock of them. The fowls were spread around the neighborhood

FROM COL. C. E. PETFORD

115

BLACK GROUSE.
(Tetrao tetrix).
⅓ Life-size.

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and were much sought after, but had as yet no name. A gentleman asked me what I called them. I said, 'Plymouth Rock.' The name passed from one to another and they were soon generally known by that name."

THE BLACK GROUSE*

Well known as the Black Cock is supposed to be, we fancy few of our readers have ever seen a specimen. It is a native of the more southern countries of Europe, and still survives in many portions of the British Islands, especially those localities where the pine woods and heaths afford it shelter, and it is not driven away by the presence of human habitation.

The male bird is known to resort at the beginning of the nesting season to some open spot, where he utters his love calls, and displays his new dress to the greatest advantage, for the purpose of attracting as many females as may be willing to consort with him. His note when thus engaged is loud and resonant, and can be heard at a considerable distance. This crowing sound is accompanied by a harsh, grating, stridulous kind of cry, which has been compared to the noise produced by whetting a scythe. The black cock does not pair, but leaves his numerous mates to the duties of maternity and follows his own desires while they prepare their nests, lay their eggs, hatch them, and bring up the young.

The nest is carelessly made of grasses and stout herbage, on the ground, under the shelter of grass and bushes. There are from six to ten eggs of yellowish-gray, with spots

of light brown. The young are fed first upon insects, and afterwards on berries, grain, and the buds and shoots of trees.

The coloring of the female is quite different from that of the male grouse. Her general color is brown, with a tinge of orange, barred with black and speckled with the same hue, the spots and bars being larger on the breast, back, and wings, and the feathers on the breast more or less edged with white.

THE CRESTED CURASSOW*

An interesting race of birds, known as the Curassows, has its range throughout that part of South America east of the Andes Mountain range and north of Paraguay. All the species are confined to this region except one, which is found in Central America and Mexico. This is the bird of our illustration.

The curassows belong to the order of gallinaceous birds, and bear the same relation to South America that the pheasants and grouse bear to the Old World. They are in every respect the most important and the most perfect game birds of the district which they inhabit. In all there are twelve species, placed under four genera. As the hind toes of the feet are placed on a level with the others, they resemble the pigeon and are unlike many of the other gallinaceous birds.

The curassows are very large and rather heavy birds, and some of them are larger than our turkey. They have short wings and a strong bill. "They live in small flocks,

CRESTED CURASSOW.
(Crax globicera.)
1/5 Life-size.

41. ACAD. SCIENCES.

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PEACOCK.
(Pavo cristatus).
⅛ Life-size.

and are arboreal in their habits, only occasionally descending to the ground, while roosting and building their nests on the branches of trees." The nests are large and made of twigs and willowy branches held in place by the stems of grasses, which are neatly interwoven between them. The nest is lined with down, feathers, and leaves.

It is said that they are easily domesticated, and that in some parts of South America they may be found in tame flocks around the homes of the planters. Though a tropical bird, it would seem that they might be acclimatized. They would certainly form a valuable addition to the list of our farm fowls, for their flesh is said to be "exceedingly white and delicate."

The female is not as large as the male, and is usually reddish in color. Their food consists almost entirely of fruit and insects.

THE PEACOCK*

It was a saying among the ancients, "As beautiful as is the Peacock among birds, so is the tiger among quadrupeds." The birds are of many varieties, some white, others with crests; that of Thibet being considered the most beautiful of the feathered creation. The first specimens were brought to Europe from the East Indies, and they are still found in flocks in a wild state in the islands of Java and Ceylon. The common people of Italy describe it as having the plumage of an angel, the voice of a devil, and the intestines of a thief. In the days of King Solomon, his navies imported from the East apes and peacocks, and Ælian relates they were brought into Greece from some barbarous

country, and that a male and a female were valued at a hundred and fifty dollars of our money. It is said also that when Alexander was in India he saw them flying wild on the banks of the River Hyarotis, and was so struck with their beauty that he imposed a fine on all who should slay or disturb them. The Greeks were so much taken with the beauty of this bird, when first brought among them, that it was shown for money, and many came to Athens from surrounding countries to see it. It was esteemed a delicacy at the tables of the rich and great, and the birds were fatted for the feasts of the luxurious. Barley is its favorite food, but as it is a proud and fickle bird, there is scarce any food it will at all times like. It lays waste the labors of the gardener, roots up the choicest seeds, and nips favorite flowers in the bud. The peahen seldom lays above a dozen eggs, which are generally hatched about the beginning of November. Though the peafowls invariably roost in trees, yet they make their nests on the ground, and ordinarily on a bank raised above the common level. The nest consists of leaves and small sticks.

The female is much smaller than her mate, and not nearly so handsome, the train being almost wanting, and the color ashy-brown, with the exception of the throat and neck, which are green.

The peacock lives about twenty years, and the beautiful variegated plumage of the male's train appears about the third year after birth. His train, though popularly called his tail, is in reality composed of the upper tail coverts, which are enormously lengthened and finished at their extremities with broad, rounded webs, or spear-shaped ends.

ROM COL. CHI. ACAD. SCIENCES

CROWNED PIGEON.
(Goura coronata).
¾ Life-size.

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THE CROWNED PIGEON

The Crowned Pigeon is the giant among pigeons. These birds pair for life, and the loss or death of a mate is in many cases mourned and grieved over, the survivor frequently refusing to be consoled.

J. G. Wood gives the following description of this interesting bird:

"The splendid crowned pigeon is indisputably the most conspicuous of all its tribe, its great size and splendid crest rendering it a most striking object, even at a considerable distance.

"So large and un-pigeonlike is this bird that few, on first seeing it, would be likely to determine its real relations to the rest of the feathered race, and would be more likely to class it among the poultry than the pigeons. If, however, the reader will lay a card upon the crest, so as to expose only the head, he will see that the general outline of the head and beak is clearly that of a pigeon. It is a native of Java, New Guinea, and the Moluccas.

"The cry of this bird is loud and sonorous, a kind of mixture between a trombone and a drum, and every time the bird utters this note it bows its head so low that the crest sweeps the ground.

"The nest of the crowned pigeon is said to be made in trees, the eggs being two in number, as is generally the case with this group of birds.

"The general color of this bird is a deep and nearly uniform slate-blue; that of the quill feathers of the wings and

tail being a very blackish-ash, and a patch of pure white and warm maroon being found on the wings."

N. M.

HOMING PIGEON*

Utilization of the homing instinct of the domesticated varieties of the Blue Rock pigeon, the *Columba livia,* by employing the birds as messengers, has long been in use.

The carrier pigeon obeys the one governing impulse of its small heart when, released at a distance from its mate and its nest, it turns with marvelous fidelity to its home cote. With no compass except that home-seeking instinct, no reliance except in the exquisitely adjusted beat of its wings, it soars upward until its keen eyesight and quick perceptions give certainty of direction; then at a splendid pace of fourteen hundred yards in a minute, it speeds on its journey home.

Once a male bird has regularly mated, he will fly back to his duties as a husband and father as fast as he can. These duties are serious and practical, for the male bird bears his full share in sitting upon the eggs and in feeding the nestlings when hatched, for which purpose both cock and hen possess special faculties and functions. The homing tendency acts best when it is entirely concentrated. For example, it has been found that a mated pair will not fly home together with anything like proper certainty. They stop and dally by the way; they behave like holiday people who have "got somebody to mind the babies."

In order to have trustworthy messengers for war or peace, the pigeons must not be bachelors or loafers, nor be

HOMING PIGEON.
½ Life-size.

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AUSTRALIAN GRASS PARRAKEET.
(Melopsittacus undulatus).
Life-size

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flown with associates; they must be the respectable mated birds with establishments, so that in employing them for war messengers one actually presses domestic virtue, as well as love and parental instinct, into the service of the military. But even the peaceful pigeon can be sometimes pugnacious on his own account, and a jealous fantail, or tumbler, or Antwerp, or Jacobin, often will conduct himself like a game cock.

THE AUSTRALIAN PARRAKEET*

Parrakeets have a great fondness for the grass lands, where they may be seen in great numbers, running amid the thick grass blades, clinging to their stems, or feeding on their seeds.

Grass seed is their constant food in their native country. In captivity they take well to canary seed, and what is remarkable, they never pick food with their feet, as do other species of parrots, but always use their beaks. "They do not build a nest, but must be given a piece of wood with a rough hole in the middle, which they will fill to their liking, rejecting all soft lining of wool or cotton that you may furnish them."

Only the male sings, warbling nearly all day long, pushing his beak at times into his mate's ear as though to give her the full benefit of his song. The lady, however, does not seem to appreciate his efforts, but generally pecks him sharply in return.

A gentleman who brought a parrakeet from Australia to England says it suffered greatly from the cold and

change of climate, and was kept alive by a kind-hearted, weather-beaten sailor, who kept it warm and comfortable in his bosom. It was not kept in a cage, but roamed at will about the room, enjoying greatly at times a ride on the cat's back. At meals he perched upon his master's shoulder, picking the bits he liked from a plate set before him. If the weather was cold or chilly, he would pull himself up by his master's whiskers and warm his feet by standing on his bald head. He always announced his master's coming by a shrill call, and no matter what the hour of night, never failed to utter a note of welcome, although apparently asleep with his head tucked under his wing.

THE DOUBLE YELLOW-HEADED PARROT*

Here we have a picture of the best, with possibly one exception — the African Gray — of the talking parrots. Its home is in Mexico, about the wooded bottoms of La Cruz River, in the Province of Taumaulipas, on the east coast. The only Mexican parrot that is in general demand as a talking pet is the Double Yellow-head, which with age develops a yellow hood that extends completely over its head and shoulders.

The parrot builds no nest. The female selects a deep hollow in the highest tree trunk, and there lays two eggs. This occurs about the first of May. The young are hatched about the 15th of June; ten days elapse before they can open their eyes, and several weeks must be allowed for the young birds to outgrow their squab state and gain sufficient strength to be removed from the care of their parents. The

DOUBLE YELLOW-HEADED PARROT.
½ Life-size.

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FROM COL. CHI. ACAD. SCIENCES.

393

OWL PARROT (NEW ZEALAND).
(Strigops habroptilus.)
⅓ Life-size.

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parrot is a wily and wise bird. It lays its eggs safely out of reach of ordinary danger, and takes good care not to betray their whereabouts. When the young birds are hatched they are fed twice a day by their elders, early in the morning and again about the close of day. The birds, in feeding their young, give vent to a series of contented clucks and chuckles, which is answered by the young ones. These birds live on mangoes and the nuts of the ebony tree.

THE OWL PARROT*

The Australian continent and New Zealand, as everybody knows, are the countries where everything goes by contraries. And it is here that the parrot group has developed some of its most curious offshoots. One would imagine beforehand that no two birds could be more unlike in every respect than the gaudy, noisy, gregarious cockatoos and the somber, nocturnal, solitary owls. Yet the New Zealand Owl Parrot is a lory which has assumed all the appearances and habits of an owl. A lurker in the twilight or under the shades of night, burrowing for its nest in holes in the ground, it has dingy brown plumage like the owls, with an undertone of green to bespeak its parrot origin; while its face is entirely made up of two great disks, surrounding the eyes, which succeed in giving it a most marked and unmistakable owl-like appearance.

Why should a parrot so strangely disguise itself and belie its ancestry? The reason is not difficult to discover. It found a place for itself ready-made in nature. New Zealand is a remote and sparsely-stocked island, peopled by

various forms of life from adjacent but still distant continents. There are no dangerous enemies there. Here, then, was a great opportunity for a nightly prowler. The owl parrot, with true business instinct, saw the opening thus clearly laid before it, and took to a nocturnal and burrowing life, with the natural consequence that those forms survived which were dingy in color. Unlike the owls, however, the owl parrot, true to the vegetarian instincts of the whole lory race, lives almost entirely upon sprigs of mosses and other creeping plants. It is thus essentially a ground bird; and as it feeds at night in a country possessing no native beasts of prey, it has almost lost the power of flight, and uses its wings only as a sort of parachute to break its fall in descending from a rock or a tree to its accustomed feeding ground.

KING PARROT OR KING LORY*

Lory is the name of certain birds, mostly from the Moluccas and New Guinea, which are remarkable for their bright scarlet or crimson coloring, though also applied to some others in which the plumage is chiefly green. Much interest has been excited by the discovery of Dr. A. B. Major that the birds of this genus having a red plumage are the females of those wearing green feathers. For a time there was much difference of opinion on this subject, but the assertion is now generally admitted.

They are called "brush-tongued" parrots. The color of the first plumage of the young is still unsettled. This bird is a favorite among bird fanciers, is readily tamed, and is of an affectionate nature. It can be taught to speak

KING PARROT.
⅔ Life-size.

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FROM COL. CHI. ACAD SCIENCES.
94

GRAY PARROT (AFRICA).
(Psittacus erithacus.)
¾ Life-size.

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very creditably, and is very fond of attracting the attention of strangers and receiving the caresses of those whom it likes.

There are few things a parrot prefers to nuts and the stones of various fruits. Wood says he once succeeded in obtaining the affections of a Parisian parrot, solely through the medium of peach stones, which he always saved for the bird, and for which it regularly began to gabble as soon as it saw him coming. "When taken freshly from the peach," he says, "the stones are very acceptable to the parrot, who turns them over, chuckling all the while to show his satisfaction, and picking all the soft parts from the deep indentations in the stone." He used to crack the stone before giving it to the bird, when his delight knew no bounds. They are fond of hot condiments, cayenne pepper or the capsicum pod. If a bird be ailing, a capsicum will often set it right again.

THE GREAT GRAY PARROT*

The common Gray Parrot, the best known in confinement of all his kind, and unrivaled as an orator for his graces of speech, is a native of West Africa. He feeds in a general way upon palm nuts, bananas, mangoes, and guavas, but he is by no means averse, if opportunity offers, to the Indian corn of the industrious native. It is only in confinement that this bird's finer qualities come out, and that it develops into a distinguished speechmaker.

As a group, the parrots must be comparatively modern birds. Indeed, they could have no place in the world until

the big tropical fruits and nuts were beginning to be developed. And it is now generally believed that fruits and nuts are for the most part of recent and special evolution. To put the facts briefly, the monkeys and parrots developed the fruits and nuts, while the fruits and nuts returned the compliment by developing conversely the monkeys and parrots. In other words, both types grew up side by side in mutual dependence, and evolved themselves *pari passu* for one another's benefit. Without the fruits there could be no fruit-eaters; and without the fruit-eaters, to disperse their seeds, there could not be any great number of fruits.

Most of the parrots very much resemble the monkeys and other tropical fruit-eaters in their habits and manners. They are gregarious, mischievous, and noisy. They have no moral sense, and are fond of practical jokes. They move about in flocks, screeching aloud as they go, and alight together on some tree well covered with berries. No doubt they herd together for the sake of protection, and screech both to keep the flock in a body and to strike consternation into the breasts of their enemies.

THE ROSE-BREASTED COCKATOO*

The Rose Cockatoo, as may be seen, is a remarkably handsome bird. The species is gregarious, and they are very numerous in South Australia, where they frequent woods and feed on seeds, fruits, and larvæ of insects. Their note is harsh and unmusical. The young ones tame readily and some species show remarkable intelligence. They associate in flocks of from one hundred to one thousand and do

FROM COL. CHI. ACAD. SCIENCES

127

ROSE-BREASTED COCKATOO.
(Psittacus roseicapillus).
½ Life-size.

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BLUE MOUNTAIN LORY.
(Psittacus swainsonii).
¾ Life-size.

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great damage to newly planted grain, for which reason they are mercilessly destroyed by farmers. Two eggs, of a pure white color, are laid in the holes of decayed trees or in the fissures of rocks, according to the nature of the locality in which they live.

This is a rather large bird, equalling a common fowl in dimensions and assuming a much larger form when it ruffles up its feathers while under the influence of anger. Many of these birds are fine talkers, and their voice is peculiarly full and loud.

The cockatoo is not gifted with the wonderful imitating powers of the true parrot, and, on account of its deafening cries, it is not an agreeable inhabitant of the house. It is in a state of nature that the birds are most interesting. They are not shy or wary, are very vociferous, and, like the common parrots, rise up in bodies toward sunset and fly two-and-two to their resting places. It is a superb sight to see thousands of these beautiful creatures flying overhead, low enough to permit a full view of their feathered mantles.

THE MOUNTAIN LORY*

This bird inhabits the vast plains of the interior of New South Wales. It is one of the handsomest, not only of the Australian parrots, but takes foremost place among the most gorgeously dressed members of the parrot family that are to be met with in any part of the world. It is about eleven or twelve inches in length. The female cannot with certainty be distinguished from her mate, but is

usually a very little smaller. The lory seldom descends to the ground, but passes the greater part of its life among the gum trees, upon the pollen and nectar of which it mainly subsists. In times of scarcity, however, it will also eat grass seeds, as well as insects, for want of which, it is said, it often dies prematurely when in captivity.

Despite his beauty, the Blue Mountain Lory is not a desirable bird to keep, as he requires great care. A female which survived six years in an aviary, laying several eggs, though kept singly, was fed on canary seed, maize, a little sugar, raw beef, and carrots.

Like all the parrot family, these lories breed in hollow boughs, where the female deposits from three to four white eggs, upon which she sits for twenty-one days. The young from the first resemble their parents closely, but are a trifle less brilliantly colored.

They are very active and graceful, but have an abominable shriek. The noise is said to be nearly as disagreeable as the plumage is beautiful. They are very quarrelsome and have to be kept apart from the other parrots, which they will kill. The feathers of the head and neck are long and very narrow and lie closely together; the claws are strong and hooked, indicating their tree-climbing habits.

THE COCK-OF-THE-ROCK*

The Cock-of-the-rock lives in Guiana. Its nest is found among the rocks.

The eggs are described as pale buff, with various-sized spots of shades from red-brown to pale lilac.

COCK-OF-THE-ROCK.

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RESPLENDENT TROGON.
⅞ Life-size.

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It is a solitary and wary bird, feeding before sunrise and after sunset and hiding through the day.

Robert Schomburgh describes its dance as follows:

"While traversing the mountains of western Guiana we fell in with a pack of these splendid birds, which gave me the opportunity of being an eye-witness of their dancing, an accomplishment which I had hitherto regarded as a fable. We cautiously approached their ballet ground and place of meeting, which lay some little distance from the road. The stage, if we may so call it, measured from four to five feet in diameter; every blade of grass had been removed and the ground was as smooth as if leveled by human hands. On this space we saw one of the birds dance and jump about, while the others evidently played the part of admiring spectators. At one moment it expanded its wings, threw its head high in the air, or spread out its tail like a peacock, scratching the ground with its foot; all this took place with a sort of hopping gait until tired, when, on emitting a peculiar note, its place was immediately filled by another performer. In this manner the different birds went through their terpsichorean exercises, each retiring to its place among the spectators, who had settled on the low bushes near the stage."

THE RESPLENDENT TROGON*

Resplendent Trogons are natives of Central America. There are fifty kinds, and this is the largest.

Of all birds, there are few which excite so much admiration as the resplendent trogon.

The skin is so singularly thin that it has not inaptly been compared to wet blotting paper, and the plumage has so light a hold upon the skin that when the bird is short the feathers are plentifully struck from their sockets by its fall and the blows which it receives from the branches as it comes to the ground.

Its eggs, of a pale bluish-green, were first procured by Mr. Robert Owen. Its chief home is in the mountains near Coban, in Vera Pas, but it also inhabits forests in other parts of Guatemala at an elevation of from 6,000 to 9,000 feet.

The cries of the trogon are various. They consist principally of a low note, whe-oo, whe-oo, which the bird repeats, whistling softly at first, then gradually swelling it into a loud and not unmelodious cry. This is often succeeded by a long note, which begins low, and, after swelling, dies away as it began. Other cries are harsh and discordant. The flight of the trogon is rapid and straight. The long tail feathers, which never seem to be in the way, stream after him. The bird is never found except in forests of the loftiest trees, the lower branches of which, being high above the ground, seem to be its favorite resort. Its food consists principally of fruit, but occasionally a caterpillar is found in its stomach.

THE NIGHTINGALE*

The Nightingale is usually regarded as an English bird, and it is abundant in many parts of the midland, eastern, and western counties of England, and the woods, coppices, and gardens ring with its thrilling song. It is also found,

NIGHTINGALE.
(Motacilla luscinia).
$\frac{4}{5}$ Life-size.

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ROBIN REDBREAST.
(Erithacus rubecula).
⅘ Life-size.

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however, in large numbers in Spain and Portugal, and occurs in Austria, upper Hungary, Persia, Arabia, and Africa, where it is supposed to spend its winters.

The markings of the male and female are so nearly the same as to render the sexes almost indistinguishable.

They cannot endure captivity, nine-tenths of those caught dying within a month. Occasionally a pair have lived, where they were brought up by hand, and have seemed contented, singing the song of sadness or of joy.

The nest of the nightingale is of a rather uncommon kind, being placed on or near the ground, the outworks consisting of a great number of dead leaves ingeniously put together. It has a deep, cup-like hollow, neatly lined with fibrous roots, but the whole is so loosely constructed that a very slight touch disturbs its beautiful arrangement. There are laid from four to six eggs of a deep olive color.

Towards the end of summer the nightingale disappears from England, and, as but little has been observed of its habits in its winter retreats, which are assumed to be in the interior of Africa, little is known concerning them.

It must be a wonderful song indeed that could inspire the muse of great poets as has that of the nightingale.

ROBIN REDBREAST*

This typically foreign bird must not be confounded with the American robin. This bird is the Robin Redbreast of childhood tales and has been the inspiration of many writers of prose as well as of poetry. In no part of its range, which covers the whole of Europe, the northern portion of Africa,

and eastern Asia, is the redbreast so revered as in England. Its sprightly air, inquiring and sagacious demeanor, its intelligence, and its trust in man make the redbreast a general favorite.

The redbreast not only remains at a distance from other small birds, but also shuns the society of its fellows. No matter how numerous the individuals may be in some hedge, each is for itself, and the truthfulness of the old saying, "One bush does not harbor two redbreasts," is apparent. Though bold and pugnacious, it does not appear that the males often give battle to each other for possession of a mate. Their solitary habits would preclude such battles. But once they have selected a breeding locality and built their home, they exhibit much resolution and in a most determined manner resist the intrusion of all other birds.

Though far from neighborly, the male is always very attentive to his mate. He seldom leaves her long, and never goes far away. With his sweet voice he is constantly encouraging her with song during the whole period of incubation. When the baby birds appear he gallantly helps his mate to feed the little ones, no light task, for the young number five to seven.

Usually the site selected for the nest is concealed by a dense foliage. If such a site is not obtainable, the birds will often conceal the nest by an ingenious arrangement of dry leaves. This interesting bird-home may be placed almost anywhere, and sometimes the oddest places seem best to satisfy the whims of this little bird.

Not only is the redbreast an interesting bird, but it is an exceedingly useful one, as it destroys insects on the lawns

KING BIRD OF PARADISE.
¾ Life-size.

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and among the shrubs and flowers. When hunting upon the ground it approaches its prey with rapid hops, and seldom misses as it pounces upon caterpillars, beetles, moths, earthworms, and flies. When insect food is scarce, and even at other times, the redbreast enjoys the crumbs of the door-yard.

THE KINGBIRD OF PARADISE*

The sublime is no nearer the ridiculous in literature than in the things of nature. An instance of this is the close relation of the common crow to the most glorious bird of them all. Not only are they very much alike in general form, including shape of feet, bill, bones, and ordinary feathering, but also in habit. They seem to delight in the same sorts of food and secure it in much the same manner. When they are happiest and attempt to pour forth their songs of joy the voice of the crow is fully as melodious and satisfactory to the human ear as is that of the bird of paradise.

While the males have not only a splendid growth of delicate floating feathers of very unusual length and glossy fineness of texture, the females have but little more to boast of than our American crow, and they even lack the degree of luster which our black friend frequently exhibits. But the males are adorned with a wealth of color display, rich in velvety softness and blazing with metallic luster. This luster cannot be appreciated from the appearance of the faded specimens so often seen in the museums, which may have suffered, not alone from dust and exposure for years to the chemical action of light, but have also been sadly

diminished in glory by the rude arts of the natives, who fumigate the skins with burning sulphur, their principal care seeming to be to get enough of it deposited to make sure of the skins not being attacked by insects.

The King Bird of Paradise is a small bird, measuring but little over six inches in length. It is extremely vivacious, flying about and running with but little show of the dignity of its family. Very fond of fruits, it is not satisfied with attacking those which other birds of its size would choose, but enjoys showing its gormandizing powers by devouring as much as possible of the largest specimens within reach.

THE SKYLARK*

The English Skylark has been more celebrated in poetry than any other song-bird.

"By the first streak of dawn," says one familiar with the skylark, "he bounds from the dripping herbage, and on fluttering wings mounts the air for a few feet ere giving forth his cheery notes. Then upward, apparently without effort he sails, sometimes drifting far away as he ascends, borne, as it were, by the ascending vapors, so easily he mounts the air. His notes are so pure and sweet, and yet so loud and varied withal, that when they first disturb the air of early morning all the other little feathered tenants of the fields and hedgerows seem irresistibly compelled to join him in filling the air with melody." The lark sings just as richly on the ground as when on quivering wing. When in song he is said to be a good guide to the weather, for whenever we see him rise into the air, despite the gloomy

SKYLARK.
(Alauda arvensis).
⅘ Life-size.

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CRESTED TITMOUSE (Europe).
(Parus cristatus).
Life-size.

looks of an overcast sky, fine weather is invariably at hand.

The nest is most frequently in the grass fields, sometimes amongst the young corn, or in places little frequented. It is made of dry grass and moss and lined with fibrous roots and a little horse hair. The eggs, usually four or five in number, are dull white, spotted, clouded, and blotched over the entire surface with brownish-green. The female lark, says Dixon, like all ground birds, is a very close sitter, remaining faithful to her charge. She regains her nest by dropping to the ground a hundred yards or more from its concealment.

The food of the lark is varied; in spring and summer, insects and their larvæ, and worms and slugs; in autumn and winter, seeds.

THE EUROPEAN CRESTED TITMOUSE*

Sprightly and restless, the Crested Titmouse of Europe frequents the topmost branches of secluded forests in northern Europe. Hopping from twig to twig, flying from branch to branch, and seeming always in motion, the little bird peers under leaves and into the crevices of the bark, diligently searching for its food of insects, of which it consumes a large number. Of a shy and retiring disposition, it has a decided liking for forests of coniferous trees, where its diminutive form and the compact foliage protect it from intruders of all kinds, while it readily finds an abundant supply of food. It is a rare bird in the central and southern parts of the European continent and in Great Britain.

In an economic sense it is a most useful bird, as it feeds

upon insects in all the stages of their development. It also feeds upon the seeds of various cone-bearing trees. Constantly active, the crest of this beautiful bird gives it an added dignity as it seeks its food, leads a flock, or quarrels with one of its kind, as it often does during the nesting season.

Probably because of its nesting habits, the crested titmouse seems to like those cone-bearing forests in which there are also deciduous trees. Its nest of grasses, moss, lichens, feathers, hair, and other soft materials is usually placed in a hole of some tree or stump. Not infrequently, however, the deserted holes of squirrels or the old nests of crows and magpies are selected.

The European crested titmouse would be a popular bird and much better known were it not for the difficulty of studying the habits of so small an object in the dense and extensive forests which it frequents. Its characteristics can only be satisfactorily observed when it is compelled to seek its food in more open places.

THE EUROPEAN SONG THRUSH*

The Song Thrush of Europe is a beautiful and familiar bird of sprightly habits and wonderful power of song. Sing it must, for it possesses a happy nature. In England and Scotland the thrushes sing from the month of January to that of October. Its blithe song indicates a contented nature and that its larder is full to overflowing. Its voice is never heard amid desolation. Its home is not in the marshes nor in regions that are without trees or hedges.

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EUROPEAN SONG THRUSH.
(Turdus musicus).
4/5 Life-size.

The song thrush loves trees; the woods and hedges around plantations, even the bushes of gardens and the orchards, are to its liking, and there it is found. It prefers animal food and thus destroys vast numbers of snails, slugs, earthworms, larvæ, beetles, and other insects. When it cannot obtain animal food, it eats berries and seeds, and frequently commits great devastations among cultivated fruits. However, much of its food consists of animal forms that are highly detrimental to the growth of cultivated plants. It eats large numbers of snails which feed upon the early vegetables and upon the smaller fruits. Even before the snails have awakened from their winter's sleep the song thrush finds them in their cozy hiding places beneath hedges and under a covering of leaves, where they have been protected from the storms and the cold. So industrious are the thrushes in their search for snails "that the hedge-side is marked by a line of broken shells, as the birds fetch the snails out and batter the shells to pieces with their bills by hammering them against a stone."

The nest is usually built in a hedge, tree, or shrub, at no great height above the ground. In unwooded localities it is often placed in a crevice of a rock or at the base of a tuft of heath. Externally, the nest is composed of slender twigs, fine roots, grasses, and moss. It is lined with a thin layer of mud, dung, or rotten wood, upon which the eggs rest.

Not only is the male song thrush a beautiful singer, but it is also industrious and very attentive to its mate during the period of hatching their young. Two, and not infrequently three, broods are raised in a single season.

THE EUROPEAN GOLDFINCH*

This gay-plumaged and sprightly goldfinch is a native of the larger part of Europe, northern Africa, and eastern Asia. Throughout its range it is a most useful bird, as it feeds extensively on the seeds of weeds, especially those of thistles and related plants. Introduced into various localities in the New England States and New York City, it has seemingly become naturalized. Its nests have been found in Central Park, New York, where they "were placed in pine trees, among the tufts of long pine needles, near the end of a slender horizontal limb and about twelve feet from the ground."

The nests are compact and handsome structures made of fine, soft grasses, small roots, and vegetable fibers, mosses, and lichens, all woven together with wool and fibers, and finally lined with soft hairs and feathers. These homes have thick walls and are very substantial, and are models of neatness.

Sometime in March the beautiful male begins to sing. Somewhat crude at first, the song reaches perfection late in May. No matter what he is doing, he finds time to stop and from some perch utter a lovely song.

Few birds are more useful to man. The goldfinch feeds almost entirely upon the seeds of those plants that are equally injurious to both the cultivated field and the pasture. It is seldom found in marshes or in cultivated fields that are free from weeds. It frequents those waste places where there are thistles and related plants and weeds of

EUROPEAN GOLDFINCH.
(Fringilla carduelis.)
Life-size

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CANARIES.
Life-size.

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the mustard family. Nearly all of these plants are most noxious to the agriculturist and several possess winged seeds that are easily transported by the winds. It is here that the goldfinch feeds most assiduously, and the number of seeds that a single bird will devour in a season is far beyond computation.

In color the female of the European goldfinch is very similar to the male, except that the tints are less brilliant.

THE CANARY

This favorite singer and cage bird is a native of the Canary Islands, Madeiras, Azores, and other small islands near the western coast of Africa. The islands are in the latitude of Florida and the climate may be said to be of a tropical character, though varied by lofty mountains. The canary in its native habitat is chiefly found in the mountainous districts, often several thousand feet above the level of the sea. The wild birds mate about the latter part of March. The nest is built in the tall trees of the evergreen species, frequently in the tops of these trees, and never less than eight or ten feet from the ground. We have seen it stated that they build on the ground, but this has been found to be an error.

The first canaries known to Europeans were brought from there by a merchant ship trading with the Canary Islands. The climate has had much to do with the change of color in these birds. The canary, which in its native home at Teneriffe is almost brown, becomes yellow and sometimes nearly white after being bred a few years in the

north, and it has been observed by naturalists that the winter fur of animals and feathers of birds become thicker and lighter in color in proportion to the coldness of the climate which they inhabit.

In England and Germany canary societies have existed for upwards of a century, and annual shows or exhibitions are held, with prizes offered for the best birds.

Of the many varieties of canaries, the most popular in the United States is the German. It is smaller than the English canary and is a much finer singer, being bred and trained for song and not for size. They are called Hartz Mountain canaries, and experts consider them the most satisfactory bird for the people. They are bred by the peasants in ordinary living-rooms high up among the Hartz Mountains of Germany. C. C. M.

THE PHILIPPINE SUN-BIRD*

The sun-birds bear a similar relation to the oriental tropics that the humming-birds do to the warmer regions of the Western Hemisphere. Both have a remarkably brilliant plumage, which is in harmony with the gorgeous flowers that grow in the tropical fields. It is probable that natives of Asia first gave the name sun-birds to these bright creatures because of their splendid and shining plumage. By the Anglo-Indians they have been called humming-birds, but they are perching birds, while the humming-birds are not. There are over one hundred species of these birds. They are graceful in all their motions and very active in their habits. Like the humming-birds, they flit from flower

FROM COL. CHI. ACAD. SCIENCES.

PHILIPPINE YELLOW-BREASTED SUN-BIRD.
(Cinnyris jugularis).
Life-size.

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RED-RUMPED TANAGER.
(Ramphocoelus costaricensis).
Life-size

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to flower, feeding on the minute insects which are attracted by the nectar, and probably to some extent on the honey, for their tongues are fitted for gathering it. However, their habit while gathering food is unlike that of the humming-bird, for they do not hover over the flower, but perch upon it while feeding. The plumage of the males nearly always differs very strongly from that of the females. The brilliantly colored patches are unlike those of the humming-birds, for they blend gradually and are not sharply contrasted, though the iridescent character is just as marked. The bills are long and slender, finely pointed, and curved. The edges of the mandibles are finely serrated.

The nests are beautiful structures suspended from the end of a bough, or even from the under side of a leaf. The entrance is near the top, and usually on the side. Over the entrance a projecting portico is often constructed. The outside of the nest is usually covered with coarse materials, apparently to give the effect of a pile of rubbish. Two eggs are usually laid in these cozy homes, but in rare instances three have been found. The Philippine Sun-bird of our illustration is a native of the Philippines and is found on nearly all the islands from Luzon to Mindanao. The throat of the male has a beautiful iridescence shaded with green, while that of the female, shown on the nest, is yellow.

THE RED-RUMPED TANAGER*

An American family, the tanagers are mostly birds of very brilliant plumage. There are 300 species, a few being tropical birds. They are found in British and French

Guiana, living in the latter country, in open spots of dwellings, and feeding on bananas and other fruits. They are also said to do much harm in the rice fields.

Mr. George K. Cherrie, of the Field Museum, says of the Red-rumped Tanager:

"During my stay at Boruca and Palmer (the last of February) the breeding season was at its height, and I observed many of the Costa Rica red-rumps nesting. In almost every instance where possible I collected both parents of the nests, and in the majority of cases found the males wearing the same dress as the females. In a few instances the male was in fully adult plumage—velvety black and crimson red. From the above it is clear that the males begin to breed before they attain fully adult plumage, and that they retain the dress of the female until, at least, the beginning of the second year.

"While on this trip I had many proofs that, in spite of its rich plumage and being a bird of the tropics, it is well worthy to hold a place of honor among the song-birds. And if the bird chooses an early hour and a secluded spot for expressing its happiness, the melody is none the less delightful."

THE SWALLOW-TAILED INDIAN ROLLER*

Swallow-Tailed Indian Rollers are natives of northeastern Africa and Senegambia, and also the interior of the Niger district. The bird is so called from its way of occasionally rolling or turning over in its flight, somewhat after the fashion of a tumbler pigeon. A traveler, in describing the habits of the Roller family, says:

SWALLOW-TAILED INDIAN ROLLER.
$\frac{4}{5}$ Life-size

MEXICAN MOT MOT.
(Momotus swainsoni).
¾ Life-size.

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"On the 12th of April I reached Jericho alone, and remained there in solitude for several days, during which time I had many opportunities of observing the grotesque habits of the roller. For several successive evenings great flocks of rollers mustered shortly before sunset on some dona trees near the fountain, with all the noise but without the decorum of rooks. After a volley of discordant screams, from the sound of which it derives its Arabic name of 'schurkrak,' a few birds would start from their perches and commence overhead a series of somersaults. In a moment or two they would be followed by the whole flock, and these gambols would be repeated for a dozen times or more.

"Everywhere it takes its perch on some conspicuous branch or on the top of a rock, where it can see and be seen. The bare tops of the fig trees, before they put forth their leaves, are in the cultivated terraces, a particularly favorite resort. In the barren Ghor I have often watched it perched unconcernedly on a knot of gravel or marl in the plain, watching, apparently, for the emergence of beetles from the sand. Elsewhere I have not seen it settle on the ground."

THE MEXICAN MOT MOT*

Mot mots are peculiar to the New World, being found from Mexico throughout the whole of Central America and the South American continent. The general plumage is green, and the majority of the species have a large racket at the end of the center tail feathers, formed by the bird itself.

The houton (so called from his note), according to

Waterson, ranks high in beauty among the birds of Demerara. This beautiful creature seems to suppose that its beauty can be increased by trimming its tail, which undergoes the same operation as one's hair in a barber shop, using its own beak, which is serrated, in lieu of a pair of scissors. As soon as its tail is fully grown, he begins, about an inch from the extremity of the two longest feathers in it, and cuts away the web on both sides of the shaft, making a gap about an inch long. Both male and female wear their tails in this manner, which gives them a remarkable appearance among all other birds.

To observe this bird in his native haunts one must be in the forest at dawn. He shuns the society of man. The thick and gloomy forests are preferred by the houton. In those far-extending wilds, about daybreak, you hear him call in distinct and melancholy tone, "Houton, houton!" An observer says: "Move cautiously to the place from which the sound proceeds and you will see him sitting in the underwood, about a couple of yards from the ground, his tail moving up and down every time he articulates "Houton!"

The mot mot lives on insects and berries found among the underwood, and very rarely is seen in the lofty trees. He makes no nest, but rears his young in a hole in the sand, generally on the side of a hill.

EGGS OF BIRDS

Life-size.

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1. Great Crested Flycatcher. 2. King Bird. 3. Night Hawk. 4. Crow. 5. Red-headed Woodpecker. 6. Yellow-billed Cuckoo. 7. Audubon's Caracara. 8. Black-billed Magpie. 9. Kingfisher. 10. Screech Owl. 11. Turkey Vulture. 12. Gamble's Partridge. 13. Bob-White.

CHAPTER XXIII

EGGS AND FEATHERS

1. PROTECT THE EGGS OF THE BIRDS

ELIZABETH NUNEMACHER, in *Our Animal Friends,* writes thus of her observation of birds. Would that her suggestions for their protection might be heeded.

"Said that artist in literature, Thomas Wentworth Higginson: 'I think that, if required, on point of death, to name instantly the most perfect thing in the universe, I would risk my fate on a bird's egg; . . . it is as if a pearl opened and an angel sang.' But far from his beautiful thought was the empty shell, the mere shell of the collector. How can he be a bird-lover who, after rifling some carefully tended nest, pierces the two ends of one of these exquisite crusts of winged melody, and murderously blows one more atom of wings and song into nothingness? The inanimate shell, however lovely in color, what is it? It is not an egg; an egg comprehends the contents, the life within. Aside from the worthlessness of such a possession, each egg purloined means we know not what depth of grief to the parent, and a lost bird life; a vacuum where song should be.

"People who love birds and the study of them prefer half an hour's personal experience with a single bird to a whole cabinet of 'specimens.' Yet a scientist recently confessed that he had slain something like four hundred and

seventy-five redstarts, thus exterminating the entire species from a considerable range of country, to verify the fact of a slight variation in color. One would infinitely prefer to see one redstart in the joy of life to all that scientific lore could impart regarding the entire family of redstarts by such wholesale butchery, which nothing can excuse.

"We hear complaints of the scarcity of bluebirds from year to year. I have watched, at intervals since early April, the nest of a single pair of bluebirds in an old apple tree. On April 29th there were four young birds in the nest. On May 4th they had flown; an addition was made to the dwelling, and one egg of a second brood was deposited. On May 31st the nest again held four young bluebirds. June 15th saw this second quartette leave the apple tree for the outer world, and, thinking surely, that the little mother had done, I appropriated the nest; but on June 25th I found a second nest built, and one white egg, promising a third brood. From the four laid this time either a collector or a bluejay deducted one, and on July 14th the rest were just out of the shell. This instance of the industry of one pair of bluebirds proves that their scarcity is no fault of theirs. I may add that the gentle mother suffered my frequent visits and my meddling with her nursery affairs without any show of anger or excitement, uttering only soft murmurs, which indicated a certain anxiety. May not the eleven young bluebirds mean a hundred next season, and is not the possessor of the missing egg guilty of a dozen small lives?"

We have observed that the enthusiasm of boys for collecting eggs is frequently inspired by licensed "collectors" who are known in a community to possess many rare and

EGGS.

Life-size.

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1. Cat Bird. 2. Robin. 3. Chickadee. 4. Long-billed Marsh Wren. 5. Brown Thrasher. 6. Yellow Warbler. 7. Red-eyed Vireo. 8. Loggerhead Shrike. 9. Cedar Waxwing. 10. Cliff Swallow. 11. Martin. 12. Rose-breasted Grosbeak. 13. Scarlet Tanager. 14. Towhee. 15. Song Sparrow. 16. Chipping Sparrow. 17. Vesper Sparrow. 18. Great-tailed Grackle. 19. Bronzed Grackle. 20. Baltimore Oriole. 21. Orchard Oriole. 22. Meadow Lark. 23. Red-winged Blackbird. 24. Blue Jay. 25. Prairie Horned Lark. 26. Wood Pewee.

EGGS.

Life-size.

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1. Spotted Sandpiper. 2. Bartramian Sandpiper. 3. Marbled Godwit. 4. King Rail. 5. American Coot. 6. Least Tern. 7. Sooty Tern. 8. Common Murre. 9. Black Tern. 10. Herring Gull.

valuable specimens. Too many nests are despoiled for so-called scientific purposes, and a limit should be set to the number of eggs that may be taken by anyone for either private or public institutions. Let us influence the boys to "love the woodrose, and leave it on its stalk."

2. FEATHERS OR FLOWERS?

Was the question which confronted the fair sex this year when about to select their Easter hats or bonnets. "Say flowers," pleaded the members of the Audubon Society, and from the many fair heads, innocent of feather adornment, which bowed before the lily-decked altars on Easter morning, one must believe that the plea was heeded.

Nearly every large house in Chicago, dealing wholly or in part in millinery goods, was visited by a member of the Audubon Society, says the *Tribune*. One man who sells nothing but millinery declared that the bird protective association was nothing but a fad, and that it would soon be dead. He further said he would sell anything for hat trimming, be it flesh, fish, or fowl, that a *woman would wear*.

Touching the question whether the beautiful terns and gulls, with their soft gray and white coloring, were to be popular, it was said that they would not be used as much as formerly. One salesman said that he would try, where a white bird was requested, to get the purchaser to accept a domestic pigeon, which was just as beautiful as the sea and lake birds named.

The milliners all agree that the snowy egret is doomed to extermination within a short time, its plumes, so fairy-

like in texture, rendering its use for trimming as desirable in summer as in winter.

As to the birds of prey, people interested in our feathered friends are as desirous of saving them from destruction as they are to shield the song-birds. There are only a few of the hawks and owls which are injurious, most of them, in fact, being beneficial. Hundreds of thousands of these birds were killed for fashion's sake last fall, so that this coming season the farmer will note the absence of these birds by the increased number of rat, mouse, and rabbit pests with which he will have to deal.

It is a matter of congratulation, then, to the members of the Audubon Society to know that their efforts in Chicago have not been wholly fruitless, inasmuch as the majority of dealers in women's headgear are willing to confess that they have felt the effect of the bird protective crusade.

Dr. H. M. Wharton, pastor of Brantly Baptist Church, Baltimore, has always been a bitter opponent of those who slaughter birds for millinery purposes. "It is wholesale murder," said he, "and I am delighted that a bill is to be offered in the Maryland legislature for the protection of song-birds. I have commented from the pulpit upon the evil of women wearing birds' wings or bodies of birds on their hats, for I have long considered it a cruel custom."

"Birds are our brothers and sisters," said the Rev. Hugh O. Pentecost before the Unity Congregation at Carnegie Music Hall, Pittsburg, a few weeks ago. "If we are children of God, so are they. The same intelligence, life, and love that is in us is in them. The difference between us is not in kind, but in degree."

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The changes a Feather undergoes in turning from Green to Yellow.

6-99

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"How is this murderous vanity of women to be overcome?" asks *Our Animal Friends.* "We confess we do not know; but this we do know, that good women can make such displays of vanity disreputable, and that good women *ought to do it.*"

INDEX VOLUMES I, II, III

PAGE

Accentor, Aquatic 406
Acknowledgments 12
Albatrosses 39
Anhinga 51
Avocet 117
Avocets 103
Awk, Little 38
Awlbird 471
Baldpate 63
Bat, Bull 239
Bec a Lancette 51
Beetle Head 143
Billy, Old 77
Bird, Bay 126
  Bead 151
  Brant 150
  Bridge 257
  Butcher 368
  Butter 283
  Dough 142
  Family, A Few of 8
  Fire 295
  of Paradise, King 505
  of Paradise, Red 474
  Oven 405
  Red 345
  Reed 283
  Rice 283
  Snake 51
  Yellow-billed Tropic 50
Birds, Diving 31
  Famous Foreign 467
  Frequenting Barns or Outbuildings. 28
  Frequenting Neglected Fields and Weed Patches 29
  Frequenting Our Sandy Shores and Gravel Beaches 30
  Frequenting Our Timbered Lakes .. 30
  Frequenting Trees Along Streams and Lakes 30
  How to Study the 13
  Inhabiting Damp Underbrush 30
  Inhabiting Upland Prairies 29
  Insectivorous 357
  Introduced 467
  Living About Open Ponds and Grassy Sloughs 30
  Marsh 103
  of Damp Woodlands 30
  of Kansas 41
  of Paradise 474
  of Prey 177
  of the Dooryard 25
  Partial to Berry Bushes, Saplings and Small Willows 29
  Shore 121
  Suggested Exercises in Grouping ... 25
  Sweetest Song 28
  That Are Partial to Evergreens ... 29
  That Are White 28
  That Do Not Construct or Use Any Nest 27

PAGE

Birds, That Feed Among the Foliage of Trees and Bushes 25
  That Feed Around the Edge of Pools and Lakes 26
  That Feed by Diving for Fish 26
  That Feed by Wading 26
  That Feed on Carrion 26
  That Feed on Mammals 26
  That Feed on the Ground 25
  That Feed on Trunks of Trees 25
  That Feed on the Wing 25
  That Feed While Swimming in Shallow Water 26
  That Frequent the Trees and Underbrush Along the Roadsides and Driveways 28
  That Haunt Damp Grassy Places .. 29
  That Inhabit Open Swamps and Bogs 30
  That Lay Their Eggs in Hollows or Nests Constructed by Other Species 27
  That Lay White Eggs 26
  That Live in Our Meadows and Pastures 29
  That Live in Our Orchards 28
  That Live on the Timbered Hillsides 29
  Wading 89
  Which Are Resident Throughout the Year in a Given Locality 27
  With Conspicuous Red or Orange Plumage 27
  With Crests or Topknots 28
Bittern 95
  Least 96
Bitterns 89
Blackbird, Crow 298
  Red-winged 287
  Rusty 297
  Skunk 281
  Yellow-headed 285
Blackbirds 281
Black-head, Little 73
Black-Jack 74
Black-Throat 391
Blue-bill, Little 73
Bluebird 462
  Arctic 465
  Mountain 465
  Rocky Mountain 465
Bobolink 281
Bobolinkum 283
Bobwhite 154
Booby 80
Brant, Black 84
  Prairie 82
Broad-Bill, Creek 73
Brown-Back 126
Buffle-head 76
Bunting, Bay-winged 319
  Black-Throated 355

	PAGE
Bunting, Crissal Towhee	344
Indigo	351
Lazuli	353
Painted	354
Reed	283
Rice	283
Snow	315
Bush-Tit	445
Yellow-Headed	446
Buzzard, Turkey	181
Calico-Back	151
Canary	511
Mexican	354
Wild	311
Canaries, Hartz-Mountain	512
Canvas-back	70
Cardinal	345
Cassowaries	476
Catbird	422
Catbirds	419
Chat, Stone	461
Yellow-breasted	412
Chewink	340
Chicaric	151
Chickadee	442
Carolina	443
Chickadees	435
Chicken, Prairie	166
Chickens	484
Mother Carey's	49
Plymouth Rock	486
Chickling	151
Chippy	331
Chuck-will's Widow	236
Cock, Black	487
Chaparral	216
Wild	485
Cockatoo, Rose	498
Rose-breasted	498
Cock-of-the-Rock	500
Contents	9
Coot	113
Butter-billed	79
Patchhead	79
Sea	80
Coots	103
Copyright	4
Cormorant, Brant's	53
Double-crested	52
Cormorants	39
Cowbird	284
Cowbirds	281
Crane, Blue	96
Sandhill	104, 96
Creeper, Brown	436
Creepers	435
Crossbeak	309
Crossbill	307
White-winged	309
Crossbills	303
American	307
Red	307
Crow	275
Water	51
Crows	265
Cuckoo, Black-billed	218
Yellow-billed	216
Cuckoos	213
Curassow, Crested	488
Curlew, Eskimo	142
Long-billed	140
Curlew, Red	133
Straight-billed	133
Dabchick	33
Darter	51
Dickcissel	355
Dickcissels	303
Die-Dapper	32
Dipper	419
Diver, Great Northern	34
Hell	32
Divers, Lobe-footed	31
Dominiques	486
Dough	133
Dove, Mourning	174
Ring-necked	175
Sea	38
Doves	153
Dovekie	38
Dovekies	31
Dowitcher	126
Driver	126
Duck, American Scoter	79
Baldpate	63
Black	61
Black English	61
Black Jack	74
Blue-winged Fall	74
Blue-winged Teal	65
Booby	80
Buffle-head	76
Butter-billed Coot	79
Canvas-back	71
Cinnamon Teal	66
Creek	62
Dusky	61
Fulvous Tree	86
Gadwall	62
Golden-eye	75
Gray	62
Green-head	60
Green-winged Teal	64
Harlequin	78
Hooded Merganser	59
Lesser Scaup	73
Long-tailed	77
Lord and Lady	78
Mallard	60
Mandarin	467
Moon-bill	74
Mountain	78
Old Billy	77
Old Injun	77
Old Molly	77
Old Squaw	77
Old Wife	77
Pintail	68
Porchard	70
Raft	73
Red-breasted Merganser	58
Red-head	70
Ring-billed	74
Ring-billed Scaup	74
Ring-billed Shuffler	74
River	57
Rock	78
Ruddy	81
Scolder	77
Sea Coots	79
Shoveller	67
South-southerly	77
Spirit	76
Spoonbill	67

PAGE

Duck, Squealer 78
Surf 80
Surf Scoter 80
Swallow-tailed 77
Velvet 80
Whistler 75
White-winged Scoter 79
Wood 69
Ducks, Deep Water 57
Fish 57
Fresh Water 57
Pond 57
Eagle, Bald 197
Golden 196
Eagles 177
Eggs 517
Falcons 177
Family, Loon 31
Feathers 517
Feathers or Flowers 519
Finch, Brown 344
Canyon 344
Grass 319
Gray-crowned Rosy 310
House 306
Pine 314
Purple 305
Finches 303
Flamebearer, Rufous 250
Flicker 232
Flamingo 90
Flamingoes 89
Flocking-fowl 73
Flycatcher, Acadian 261
Ash-throated 256
Green-crested 261
Olive-sided 258
Scissor-tailed 253
Traill's 262
Vermilion 263
Yellow-bellied 260
Flycatchers 253
Fool-Hen 160
Fowl, Black Java 486
Domestic 484
Red Jungle 485
Fowls, Farmyard 485
of the Air 484
of the Earth 484
of the Sea 484
Gadwall 62
Gallinule, Florida 112
Purple 111
Gallinules 103
Game, Black-breasted 485
Geese 57
Snow 82
Gnatcatcher, Blue-gray 449
Gnatcatchers 435
Goatsuckers 235
Godwit, Marbled 133
Golden-eye 75
Goldfinch 311
Arkansas 313
European 510
Goose, Brant 84
Canada 83
White-fronted 82
Goshawk 187
Western 187
Grackle 297

PAGE

Grackle, Bronzed 298
Great-tailed 301
Grackles 281
Grayback 126
Grebe, Horned 32
Pied-billed 33
Grebes 31
Eared 32
Grecial Lady 51
Green-head 60
Grosbeak, Black-headed 349
Blue 350
Evening 303
Pine 304
Rose-breasted 347
Grouse 153
Black 487
Blue 160
Canada 161
Dusky 160
Grey 160
Mountain 160
Pine 160
Prairie Sharp-tailed 170
Ruffed 162
Gull, Bonaparte's 43
Herring 41
Ring-billed 42
Summer 47
Gulls 39
Hamburg, Silver-spangled 485
Hammer, Yellow 232
Harlequin 78
Harrier, Marsh 185
Hawk, Black 190
Black Rough-legged 190
Broad-winged 194
Chicken 193
Ferruginous Rough-legged 195
Fish 200
Hen 193
Killy 199
Marsh 185
Mouse 369
Red-shouldered 193
Red-tailed 189, 191
Rough-legged 190
Sharp-shinned 186
Sparrow 199
Western Red-tailed 191
Hawks 177
Head, Beetle 143
Hell-Diver 33
Hen, Lesser Prairie 168
Marsh 105
Mud 113
Plymouth Rock 486
Prairie 166
Rice 112
Salt-water Marsh 106
Heron, Black-crowned night 101
Great Blue 96
Little Blue 99
Little Green 99
Snowy 98
Herons 89
Hew-Hall 471
High-Hoe 471
High-Hold 232
Hoeboells 32
Honeysucker, Ruff-necked 250
Houton 515

PAGE

Hummer, Cinnamon 250
Humming-bird, Allen's 251
Anna's 247
Black-chinned 246
Broad-tailed 248
Rivoli 243
Ruby-throated 244
Rufous 250
Rufous-backed 250
Humming-birds 235, 242
Ibis, Scarlet 93
White 92
White-Faced Glossy 94
Ibises 89
Injun, Old 77
Janco, Pink-sided 334
Slate-colored 333
Jay, Arizona Green 271
Blue 268
Canada 272
Long-crested 270
Steller's 269
Jays 265
Kick-up, Besoy 406
Water 406
Killdeer 145
King Lory 496
Kingbird 254
Arkansas 255
of Paradise 505
Kingfisher, Belted 219
European 472
Kingfishers 214
Kinglet, Golden-crowned 447
Ruby-crowned 448
Kinglets 435
Kite, Everglade 184
Swallow-tailed 182
Kittiwake 40
Knot 127
Lady, Grecial 51
Lark, American Sky 265
Horned 265
Prairie 265
Shore 265
Sky 265
Snow 265
Larks 265
Leucosticte, Gray-crowned 310
Long Spur, Lapland 316
Smith's 317
Loon 34
Family 31
Lord and Lady 78
Lory, King 496
Mountain 499
Lyre Bird 473
Mackerel 47
Magpie 267
Magpies 265
Mallard 60
Mandarin 467
Marlin, Marbled 133
Martin, Bee 254
Purple 361
Western 361
Meadowlark 289
Meadowlarks 281
Merganser, Hooded 59
Red-breasted 58
Mergansers 57

PAGE

Mocking-Bird 421
Mocking-Birds 419
Molly, Old 77
Monal 479
Moon-bill 74
Mot Mot, Mexican 515
Mountain Lory 499
Murre, Brunnich's 37
Murres 31
Murrelet, Marbled 36
Nature Lovers, To 5
Nature, the Old Nurse 6
Nest, Hang 295
Nickapecker 471
Nighthawk 239
Nighthawks 235
Nightingale 502
Nonpareil 354
Nutcracker, Clark's 277
Nutcrackers 265
Nuthatch, Brown-headed 439
Red-breasted 438
White-breasted 437
Nuthatches 435
Oriole, Audubon's 291
Baltimore 295
Bullock's 296
Golden 291
Hooded 293
Orchard 294
Orioles 281
Osprey 200
Ostrich, South American 478
Ouzel, Water 407, 419
Owl, Barn 201
Burrowing 212
Cinereous 204
Great Gray 204
Great Horned 207
Hawk 211
Hoot 207
Little Horned 206
Monkey-faced 201
Prairie 203
Red 206
Saw-whet 205
Screech 206
Short-eared 203
Snowy 210
Western Horned 208
Paroquet, Carolina 214
Paroquets 213
Parrakeet, Australian 493
Parrot, African Gray 494
Brush-tongued 496
Common Gray 497
Double Yellow-headed 494
Great Gray 497
King 496
Owl 495
Partridge 162
Gambel's 158
Massena 159
Mountain 156
Scaled 157
Spruce 161
Peacock 489
Peetweet 139
Pelican, White 54
Pelicans 39
Petrel, Wilson's 49
Petrels 39

PAGE

Pewee 257
Wood 258
Phalarope, Northern 114
Wilson's 115
Phalaropes 103
Pheasant, Golden 480
Impeyan 479
Japan 483
Penciled 481
Ring-necked 482
Silver 481
Phoebe 257
Pick-a-Tree 471
Pigeon, Blue Rock 492
Carrier 492
Crowned 491
Homing 492
Passenger 172
Prairie 138
Tumbler 514
Wild 172
Pigeons 153
Pink, River 406
Pintail 68
Plover 121
American Golden 144
Black-bellied 143
Piping 147
Ruddy 131
Ring 146
Snowy 149
Semi-palmated Ring 146
Upland 138
Yellow-legged 135
Poke 99
Porchard 70
Preface, Publisher's 7
Protect the Eggs of the Birds 517
Ptarmigan, White-tailed 165
Willow 164
Puffin, Tufted 35
Puffins 31
Quail 153
Arizona 158
Quaily 138
Quartette, Noonday 351
Quawk 101
Rail, Clapper 106
King 105
Sora 109
Virginia 107
Yellow 110
Rails 103
Rainbird 471
Rainfowl 471
Raven 274
Redbird, Summer 360
Redhead 70
Redpoll 311
Redstart 417
Rhea, South American 478
Road-runner 216
Robin 458
Ground 340
Redbreast 503
Western 459
Roller, Swallow-tailed Indian 514
Rump, Golden Yellow 144
Runner, Road 216
Sanderling 131
Sandpiper, Ash-colored 127
Bartramian 138

PAGE

Sandpiper, Field 138
Least 129
Pectoral 128
Red-backed 130
Spotted 139
Sandpipers 121
Sand-Runner 151
Sapsucker, Red-breasted 227
Yellow-bellied 225
Scaup, Lesser 73
Ring-necked 74
Schytepoke 99
Scolder 77
Scoter, American 79
Surf 80
White-winged 79
Shank, Red 47
Shelldrakes 57
Shoveller 67
Shrike, Great Northern 368
Loggerhead 369
Shrikes 357
Shuffler, Ring-billed 74
Siskin, Pine 314
Skylark 265, 506
Snipe, Gray 126
Horse-foot 151
Red-breasted 127
Robin 127
Surf 131
White 131
Wilson 124
Snipes 121
Snowbird 265
Snowflake 315
South-Southerly 77
Sparrow, Chipping 331
English 318
Field 332
Fox 339
Golden-crowned 328
Grasshopper 321
Harris 325
Lark 324
Lecontes 323
Savanna 320
Song 335
Swamp 338
Tree 330
Vesper 319
White-crowned 327
White-throated 329
Sparrows 303
Species Which Are Famous as Game Birds 28
Speckle-bellies 82
Spoonbill 67
Roseate 91
Spoonbills 89
Squaw, Old 77
Squealer 78
Starling 278
Stilt, Black-necked 118
Stone-Chat 461
Sun-Bird, Philippine 512
Swallow, Barn 362
Sea 47
Tree 363
Violet-green 364
Swallows 357
Swan, Black 469
White 470

	PAGE
Swift, Chimney	240
Swimmers, Long-winged	39
Totopalmate	39
Tube-nosed	39
Tanager, Louisiana	358
Red-rumped	513
Rose	360
Scarlet	359
Summer	360
Tanagers	357
Teal, Blue-winged	65
Cinnamon	66
Green-winged	64
Tell-Tale	134
Tern, Black	48
Caspian	44
Common	47
Forster's	46
Wilson's	47
Terns	39
Thrasher, Bendire's	424
Brown	424
California	426
Cressal's	424
Curve-billed	424
Leconte's	424
Palmer's	424
Thrashers	419
Thrush, Alice's	455
Aquatic	406
European Song	508
Golden-crowned	405
Gray-cheeked	455
Hermit	457
Louisiana Water	407
Thrush, Olive-backed	456
Song	452
Varied	461
Water	406
Wilson's	453
Wood	452
Thrushes	451
Tip-Up	139
Titmice	435
Titmouse, European Crested	507
Least	445
Tufted	440
Toucan, Yellow-throated	475
Towhee	340
Arctic	343
Brown	344
California	344
White-eyed	341
Trogan, Resplendent	501
Troopial, Rice	283
Troupalo	295
Turkey, Water	51
Wild	171
Turnstone	150
Turnstones	121
Veery	453
Verdin	446
Verdins	435
Vireo, Blue-headed	374
Red-eyed	370
Solitary	374
Warbling	372
White-eyed	374
Yellow-throated	373
Vireos	357
Vulture, Black	181
Vulture, California	178
Turkey	180
Vultures	177
American	181
Wagtail, Water	406
Wake-up	232
Warbler, Audubon's	393
Bay-breasted	397
Black and White	378
Blackburnian	399
Black-poll	398
Black-throated blue	391
Black-throated green	400
Blue-winged Swamp	382
Blue-winged Yellow	382
Canadian	415
Cape May	389
Cerulean	395
Chestnut-sided	396
Connecticut	409
Golden-winged	383
Hooded	414
Kentucky	408
Magnolia	394
Mourning	409
Myrtle	392
Nashville	384
Orange-crowned	385
Palm	402
Parula	388
Prairie	404
Prothonotary	379
Red-poll	402
Redstart	417
Swainson's	380
Tennessee	387
Townsend's	401
Worm-eating	381
Yellow	390
Yellow-Palm	402
Yellow Red-poll	402
Yellow-rumped	392
Warblers	377
Water-Thrush	406
Louisiana	407
Small-billed	406
Water-Witch	33
Waxwing, Bohemian	365
Cedar	366
Waxwings	357
Wheatear	461
Whip-Poor-Will	237
Whip-Poor-Wills	235
Whistler	75
Whittle	471
Wife, Old	77
Willet, Western	136
Witch, Water	32
Wolf-Birds	484
Woodcock	122
Woodpecker, California	230
Downy	222
Green	471
Hairy	221
Ivory-billed	220
Nuttall's	223
Pileated	228
Red-bellied	231
Red-headed	229
Three-toed	224
Woodpeckers	214
Wren, Bewick's	428

	PAGE
Wren, Carolina	427
House	429
Jenny	429
Long-billed Marsh	433
Short-billed Marsh	432
Winter	431
Wrens	419
Yellow-Hammer	232
Yellow-Legs	135
Greater	134
Lesser	135
Summer	135
Yellow-Shanks, Greater	134
Yellow-Throat, Maryland	410
Western	411
Yoppingall	471